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The site of Henry David Thoreau's cabin, built at Walden Pond in 1845, photographed in 1901 – the cellar still visible – by Herbert Gleason.

MOST OF THE LUXURIES, and many of the so called comforts of life, are not only not indispensable, but positive hinderances to the elevation of mankind. With respect to luxuries and comforts, the wisest have ever lived a more simple and meager life than the poor. The ancient philosophers, Chinese, Hindoo, Persian, and Greek, were a class than which none has been poorer in outward riches, none so rich in inward. We know not much about them. It is remarkable that *we* know so much of them as we do. The same is true of the more modern reformers and benefactors of their race. None can be an impartial or wise observer of human life but from the vantage ground of what *we* shall call voluntary poverty.

HENRY DAVID THOREAU
Walden

Cover

The dancers on Robert Crumb's cover continue on p. 28 their treatment of "Voluntary Simplicity," a heavy theme in this issue. Henceforth **The CQ** *will be honored by a regular feature from Crumb. The Gleason photograph on the inside front cover is from* **The Illustrated Walden** *(1973, University of Princeton) – more of his pictures may be found in the Sierra Club's* **Thoreau Country**. *The inside back cover was inked on a cafe napkin by Dan O'Neill. The knife, fork, and spoon are drawn from life.* —*Stewart Brand (SB)*

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Politics

When Stanford Research Institute (SRI) predicted a year ago that THE FASTEST GROWING SECTOR OF THE MARKET IS PEOPLE WHO DON'T WANT TO BUY MUCH, the business community took notice. This report, "Voluntary Simplicity (3)," is an updated rewrite of that SRI paper ("Voluntary Simplicity (2)") by the same authors. The classic 1936 Richard Gregg article – "Voluntary Simplicity (1)" – is reprinted on p. 20.

VOLUNTARY SIMPLICITY (3)

BY **DUANE ELGIN** AND **ARNOLD MITCHELL**

Photographs by Ilka Hartmann and Michael Phillips

I. INTRODUCTION

FOR THE PAST SEVERAL YEARS the popular press has paid occasional attention to stories of people returning to the simple life – of people moving back to the country or making their own bread or building their own solar-heated home, and so on. Beneath this popular image of simple living, we think there is a major social movement afoot which has the potential of touching the United States and other developed nations to their cores. This is the movement towards "voluntary simplicity" – a phrase we have borrowed from Richard Gregg who, in 1936, was describing a way of life marked by a new balance between inner and outer growth. Further, we think that voluntary simplicity may prove an increasingly powerful economic, social, and political force over the coming decade and beyond if large numbers of people of diverse backgrounds come to see it as a workable and purposeful response to many of the critical problems that we face. The emergence of voluntary simplicity could represent a major transformation of traditional American values. In this context, it may be a harbinger of multifold shifts, not only in values, but in consumption patterns, institutional operations, social movements, national policies, and so on.

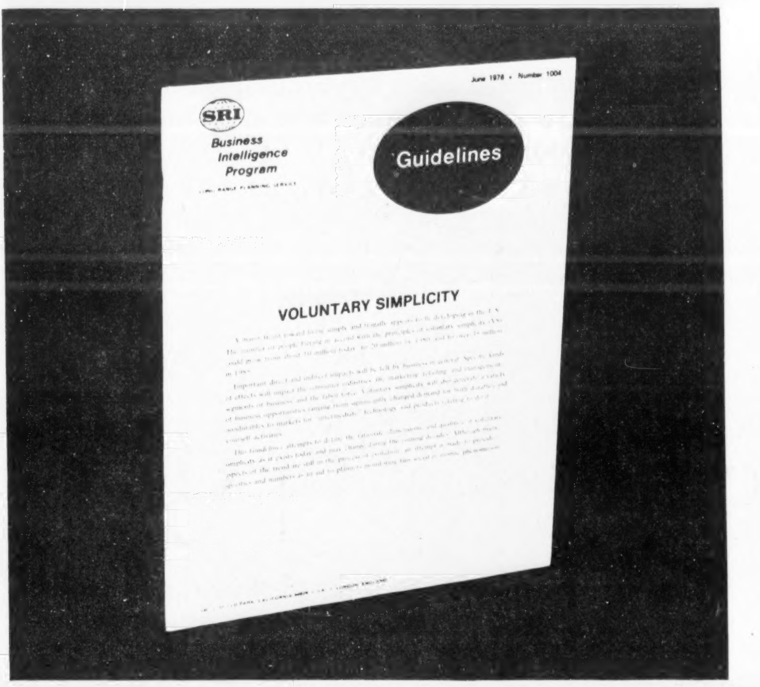
It is mildly ironic that Stanford Research Institute (annual sales over $100 million, 3000-plus employees, offices in 12 cities worldwide) should voluntarily undertake a study of "Voluntary Simplicity," to be disseminated among major corporations subscribing to the Institute's Business Intelligence Program. It is more ironic that the study should awaken more interest among the B-I-P subscribers than any previous report of its kind. The interest has been so extraordinary, in fact, that SRI agreed to dispatch a team of its senior staff people to present details of the report to a large number of business groups located in a half dozen major U.S. cities. Their swing through the country was completed in April, and since then the report's authors have been continuing to respond to a flood of inquiries and to mull over "What's going on here?"

The rewritten version of the report, which follows, may not be a surprise to readers of **CQ**, *especially those readers who are professionally speculating about the future as corporate planners, or the nonplanners who have carefully been following the studies of leading futurists for the past several years. I personally know of one network of* **CQ** *readers – representing some prominent corporations, universities and foundations throughout the U.S. (with an interesting core of some especially heavy duty social analysts clustered in the environs of Stanford Univeristy) – who have been corresponding with one another for several years about the inevitability of people in this country choosing to adopt less materialistic and more spiritually-oriented behavior. It is no coincidence that E.F. Schumacher, whose theme is "Small is Beautiful," is also considered a part of this spiritual mafia. (Dr. Schumacher's recent swing through the U.S. also generated standing room only audiences among business and governmental leaders – probably for the same reasons that explain the popularity of SRI's tour.)*

If the future has waves, and if voluntary simplicity is such a wave, let us all rejoice. It will bring us more good than bad, assuming, of course, that self discovery is to be desired over self destruction.

For myself, I am willing to witness the agony of my favorite economic statistics melting away into disrepute, along with the reputations of the economists who have been producing such statistics. But I find myself pondering the availability or the capacity of our formal social institutions to respond to voluntary simplicity trends. That is, how many outstanding Buddhist teachers, TM leaders, and EST trainers and how many Quaker meeting houses and ashrams can be expected to materialize in the next several years to provide competent, benign support to this blossoming population of non-materialistic families and individuals? To be honest, I'd be happy to wait another 20 years for our age of enlightenment rather than be rapidly overwhelmed with another media-stimulated stampede of new age flower children.

Richard Raymond
May 8, 1977



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SRI

Business Intelligence Program

Guidelines

VOLUNTARY SIMPLICITY

"Voluntary Simplicity (2)" – the most popular report ever from SRI's Business Intelligence Program.

Although there are many precursors and contributing streams to this social flow (environmentalism, consumerism, consciousness movement, etc.), there is little direct evidence to measure the magnitude of this way of life. This discussion, then is not intended to be predictive or definitive; rather, as social conjecture and pattern recognition, it is inherently speculative and intended to provoke further thought and comment regarding voluntary simplicity.

In this paper, we start with a definition of voluntary simplicity (which we will sometimes refer to as VS) and look at the goals and values of people espousing it. We next discuss who the VS people are, their living patterns, and plausible trends in VS out to the year 2000. The paper then discusses the social and business implications of VS.

II. What Is Voluntary Simplicity?

THE ESSENCE OF VOLUNTARY SIMPLICITY is living in a way that is outwardly simple and inwardly rich. This way of life embraces frugality of consumption, a strong sense of environmental urgency, a desire to return to living and working environments which are of a more human scale, and an intention to realize our higher human potential – both psychological and spiritual – in community with others. The driving forces behind voluntary simplicity range from acutely personal concerns to critical national problems. The appeal of simple living appears to be extraordinarily widespread, even gathering sympathy from among those who are not presently attempting to simplify their own life patterns. Voluntary simplicity is important because it may foreshadow a major transformation in the goals and values of the United States in the coming decades. Although a social movement still in its early stages, its practical and ethical positions seem well enough developed to permit useful analysis of this way of life.

Voluntary simplicity is not new. Nonetheless, the conditions and trends which appear to be driving its contemporary emergence do seem new in their magnitude and intensity. Historically, voluntary simplicity has its roots in the legendary frugality and self-reliance of the Puritans; in Thoreau's naturalistic vision at Walden Pond; in Emerson's spiritual and practical plea for "plain living and high thinking"; in the teachings and social philosophy of a number of spiritual leaders such as Jesus and Gandhi.

A uniquely modern aspect of voluntary simplicity is that this way of life seems to be driven by a sense of urgency and social responsibility that scarcely existed ten or fifteen years ago. This sense of urgency appears to derive from many serious societal problems, including: the prospects of a chronic energy shortage; growing terrorist activities at the same time that developed nations seem increasingly vulnerable to disruption; growing demands of the less developed nations for a more equitable share of the world's resources; the prospect that before we run out of resources on any absolute basis we may poison ourselves to death with environmental contaminants; a growing social malaise and purposelessness which causes us to drift in our social evolution; and so on. These are but a few of the more modern elements which converge to make voluntary simplicity a seemingly rational response to a pressing situation.

Values Central to Voluntary Simplicity

Voluntary simplicity is a name which denotes a social movement of great diversity and richness. Not surprisingly, there are many values congruent with voluntary simplicity – that radiate out, so to speak, touching global as well as close-to-home issues, idealistic as well as practical matters, and worldly along with personal concerns. Yet, there seems to be an underlying coherence to the rich diversity of expression of this way of life. Consequently, we have selected a skeletal list of those values which seem to us to lie at the heart of this emerging way of life. These five values are the following:

- Material Simplicity
- Human Scale
- Self-Determination
- Ecological Awareness
- Personal Growth

These are considered in detail below.

1. *Material Simplicity* – Simplification of the material aspects of life is one of the core values of voluntary simplicity. The American Friends Service Committee, long a leader in exploring a way of life of creative simplicity, defines simple living as a "non-consumerist life-style based upon being and becoming, not having." The Friends have identified four consumption criteria which evoke the essence of voluntary material simplicity:

- Does what I own or buy promote activity, self-reliance, and involvement, or does it induce passivity and dependence?
- Are my consumption patterns basically satisfying, or do I buy much that serves no real need?
- How tied is my present job and life style to

installment payments, maintenance and repair costs, and the expectations of others?
- Do I consider the impact of my consumption patterns on other people and on the earth?

These consumption criteria imply an intention to "reduce frills and luxuries in our present lifestyle but at the same time emphasize the beauty and joy of living." They are designed to (1) help people lead lives of creative simplicity, freed from excessive attachment to material goods; (2) aid the nation release more of its wealth to share with those who presently do not have even the basic necessities of life; (3) help individuals become more self-sufficient and less dependent upon large, complex institutions, whether public or private; and (4) restore to life a sense of proportion and balance between the material and non-material aspects of living.

Although living simply implies consuming quantitatively less (particularly items that are energy inefficient, nonbiodegradable, nonessential luxuries, etc.), this does not mean that the overall cost of consumption will go down drastically. Living simply need not be equated with living cheaply. The hand crafted, durable, esthetically enduring products that appeal to frugal consumers are oftentimes purchased at a considerable premium over mass-produced items. Therefore, although the quantity of consumption may decrease and the environmental costs of consumption may be considerably moderated, the overall cost of consumption may remain relatively high since our economy is not oriented to producing the kinds of products which fit these criteria. Material simplicity will thus likely be manifest in consumption styles that are less ascetic (of strictly enforced austerity) and more aesthetic (where each person will consider whether his or her level and pattern of consumption fits, with grace and integrity, into the practical art of daily living). In this view, material possessions are supportive of rather than central to, the process of human growth. Since the ways of expressing that growth are diverse, it seems likely that the degree and nature of material simplification will be a matter for each individual to settle largely for him or herself.

2. *Human Scale* – A preference for human-sized living and working environments is a central feature of the values constellation embraced by voluntary simplicity. Adherents to voluntary simplicity tend to equate the gigantic scale of institutions and living environments with anonymity, incomprehensibility, and artificiality.

In contrast, as E.F. Schumacher has so powerfully stated, "Small is Beautiful." The smallness theme touches on many facets of living. It implies that living and working environments as well as supportive institutions (which have grown to enormous levels of scale and complexity) should, whenever possible, be decentralized into more comprehensible and manageable entities. This further implies that people's endeavors should be of such dimensions that each knows what he/she contributes to the whole and, hence, has a sense of shared rewards and shared responsibility. Reduction of scale is seen as a means of getting back to basics by restoring to life a more human sense of proportion and perspective.

3. *Self-Determination* – Voluntary simplicity embraces an intention to be more self-determining and less dependent upon large, complex institutions whether in the private sector (the economy) or public sector (the political processes). Self-determination manifests itself in consumption as a desire to assume greater control over one's personal destiny and not lead a life so tied to "installment payments, maintenance costs and the expectations of others." To counterbalance the trend towards increasing material dependency a person may seek to become more materially self-sufficient – to grow his own, to make his own, to do without, and to exercise self-discipline in his pattern and level of consumption so that the degree of dependency (both physical and psychological) is reduced.

Self-determination shows up in production as a counterbalancing force to combat excessive division of labor. Therefore, instead of embracing specialization the adherent to voluntary simplicity may seek greater work integration and synthesis so that the relationship between his work and its contribution to the whole is more evident.

In the public sector, the drive for greater self-determination is revealed by a growing distrust of and sense of alienation from large and complex social bureaucracies. The individual – particularly the adherent to voluntary simplicity – seems to want to take charge of his life more fully and to manage his own affairs without the undue or unnecessary intrusion of a remote bureaucracy. This dimension of voluntary simplicity may explain some of the unusual political coalitions that seem to be emerging between the right and left – where neither support the further intrusion of big institutions into their lives, but rather wish for greater local self-determination and grass roots political action. This aversion to being controlled by increasingly distant bureaucracies is reminiscent of the stubborn independence out of which was born the American revolution.

4. *Ecological Awareness* – A sense of ecological awareness which acknowledges the interconnectedness and interdependence of people and resources is central to voluntary simplicity. There emerges from this awareness a number of themes that are hallmarks of this way of life. For example, ecological awareness prompts recognition that our earth is indeed limited, with all that implies for conservation of physical resources, reduction of environmental pollution, and maintenance of the beauty and integrity of the natural environment. Importantly, this awareness often seems to extend beyond a concern for purely physical resources to include other human beings as well. The philosophy of "welfare" espoused by Gandhi (sarvodaya – not wanting what the least of the inhabitants of this earth cannot have) seems to spring, in substantial part, from this intimate sense of felt connection with those who are less fortunate than we. From this awareness there may arise a sense of compassion and caring that extends beyond the boundaries of the nation-state to include all of humankind. In acknowledging the underlying unity of the human race, the growth of an ecological awareness

Ilka Hartmann

The rural "simple life," as seen in popular imagination and increasingly frequent reality.

expands the vision of voluntary simplicity outward and brings with it a strong sense of social responsibility and worldly involvement to what otherwise could be a relatively isolated and self-centered way of life.

Some of the more concrete expressions of this awareness might include: a willingness to share resources with those who are disadvantaged; a sense of global citizenship with commensurate adjustments in lifestyle, social vision, and political commitments; a preference for living where there is ready access to nature; and a desire to foster human and institutional diversity at a grass roots level.

5. *Personal Growth* – For many persons taking up a materially simple way of life, the primary reason is to clear away external clutter so as to be freer to explore the "inner life." The themes of material simplicity, self-sufficiency, a more human scale to living and working, and an ecological awareness are, in a way, devices to sweep away impediments to inner growth. The goal, then, is to free oneself of the overwhelming externals so as to provide the space in which to grow – both psychologically and spiritually. Simone de Beauvoir succinctly stated the rationale for this desire for self-realization when she said: "Life is occupied in both perpetuating itself and in surpassing itself; if all it does is maintain itself, then living is only not dying." From the vantage point of many adherents to voluntary simplicity, contemporary American society is primarily occupied in perpetuating itself – and living has become "only not dying." As the workability and meaning of traditional values and goals becomes less compelling, a small but rapidly growing number of Americans have become intensively engaged in the attempt to surpass themselves. Although personal growth often includes a distinctly spiritual aspect, involvement with the inner/non-material dimension of life should not be associated with any particular philosophy or religion – its scope embraces activities ranging from biofeedback, humanistic psychology, transpersonal psychology, Eastern philosophy, fundamentalist Christianity, and more.

A concern for the subjective aspect of experience and for the quality of human relationships has been reflected in a steady current of evolving social trends over the past 15 years. Developments have included the emergence and proliferation of the "human potential movement"; the emergence of "transpersonal psychology" coupled with a rapid increase of interest and involvement in many Eastern meditative traditions; the growth of feminism; a cultural fascination with psychic phenomena; developments in brain research that confirm a biological basis for both the rational and the intuitive side to human nature; a growing interest in sports as both a physical and spiritual process (e.g., the "inner game" of tennis); and more.

Without the compelling goal of exploring inner potentials, it seems unlikely that there will be sufficient motivation to adopt voluntarily a way of life of material simplicity. Without greater simplicity, it seems unlikely that we will be able to cope successfully with the problems engendered, for example, by scarcity. Finally, unless inner learning expands, it seems unlikely there will develop the degree of internal maturation necessary for the human species to act as wise trustees of conscious evolution on this earth.

Still, even this analysis does not penetrate to the roots of the connection between personal growth and voluntary simplicity. To explain adequately, we must look to a deeper underlying vision. It is an old vision –

perhaps as old as civilized man – but an enduring one that seems destined to be rediscovered again and again. The nature of this vision is succinctly summed up by the eminent historian, Arnold Toynbee:

> These religious founders [Jesus, Buddha, Lao Tse, St. Francis of Assisi] disagreed with each other in their pictures of what is the nature of the universe, the nature of spiritual life, the nature of ultimate spiritual reality. But they all agreed in their ethical precepts. They all agreed that the pursuit of material wealth is a wrong aim. We should aim only at the minimum wealth needed to maintain life; and our main aim should be spiritual. They all said with one voice that if we made material wealth our paramount aim, this would lead to disaster. They all spoke in favor of unselfishness and of love for other people as the key to happiness and to success in human affairs.

The foregoing five themes do not exhaust the range of basic values that may emerge as hallmarks of the way of life termed voluntary simplicity. Moreover, these values will surely be held to differing degrees and in differing combinations by different people. Nonetheless, these values possess an underlying coherence which suggests that they have not arisen randomly but rather as a strongly reinforcing set or pattern. Just a few moments of reflection reveals how powerfully reinforcing these values are; for example, personal growth may foster an ecological awareness which may prompt greater material simplicity and thereby allow greater opportunity for living and working at a smaller, more human scale which, in turn, may allow greater opportunity for local self-determination. No one value theme alone could create the vitality and coherence that emerges from the synergistic interaction of these values. To the extent that these values provide people with a realistic basis for both maintaining and surpassing themselves, they then constitute a practical "world view" – a coherent pattern of perception, belief and behavior which could provide an important bridge between the traditional industrial world view and an uncertain and difficult social future.

Ilka Hartmann

Cheap

What Voluntary Simplicity Is Not

We have been trying to define what voluntary simplicity is. We can also get a sense of voluntary simplicity by suggesting what it is not.

- Voluntary simplicity should not be equated with a back-to-nature movement. Although an historic shift in net population migration towards small towns and rural places is underway, the large majority of people continue to reside in urban environments. Voluntary simplicity seems perhaps as compelling for this urban majority as it does for the rural minority. An urban existence need not be incompatible with voluntary simplicity; indeed, many of the experiments with appropriate technology, intensive gardening, and such have been conducted in urban contexts.

- Although voluntary simplicity surely traces some of its contemporary heritage and vitality to the counterculture movement of the 1960s, its present constituency is certainly not limited to that group. Many of its adherents are of an age and background far removed from the proponents of the so-called "new values" a decade ago.

- Voluntary simplicity should not be equated with living in poverty. Indeed, impoverishment is in many ways the opposite of simple living in that poverty tends to make life a struggle to maintain oneself and provides little opportunity to surpass oneself.

- Voluntary simplicity is not a social panacea. It does imply social evolution towards what its adherents view as the minimal requirements for long term global survival but that does not itself cure the problems we confront; rather, voluntary simplicity may provide a basis from which societal responses with some long term hope for success can emerge.

- It is not a movement with heart but without the skills necessary to bring it to fruition. Among those who adhere to many of the tenets of voluntary simplicity are, in our estimation, some of the most creative and capable intellects, artists, and humanistic capitalists in the United States. Voluntary simplicity draws its ranks substantially from the well-educated, and, as such, has access to a rich pool of talent.

- Voluntary simplicity is not a social movement confined to the United States. Virtually all of the developed Western nations seem to be moving in a somewhat similar direction (although its expression may be altered by the cultural context and social experience). Many European nations, with more limited land and resources, have been learning how to cope with scarcity for far longer than the United States has. And there is evidence that other nations may be opting for voluntary simplicity rather than endure the stress of striving for affluence. For example, a recent poll in Norway found that "74 percent of the total sample claimed they would prefer a simple life with no more than essentials (these were, however, not defined) to a high income and many material benefits if these have to be obtained through increased stress."

- Voluntary simplicity is not a fad. Its roots reach far too deeply into the needs and ideals of people everywhere to be regarded as a transitory response to a passing societal condition.

The Push Toward Voluntary Simplicity

We have suggested that there is a strong pull towards voluntary simplicity. It seems to offer a practical, workable, and meaningful way of life for a small but significant segment of the population. Yet, despite the strength of this pull to voluntary simplicity, there is little reason to think that this way of life will grow to embrace substantial proportions of the population unless the pull is matched by substantial pushes. These twin elements of push and pull need to be considered if we are to assess the likelihood that voluntary simplicity will gather social momentum in the future. We turn, then, to consideration of whether societal problems will push us in a direction similar to that exerted by the pull toward voluntary simplicity.

The range and diversity of contemporary societal problems is enormous. Space does not allow more than a cursory glance at some of the more prominent problems which may, in their eventual resolution, push us towards a simple way of life. These problems include:

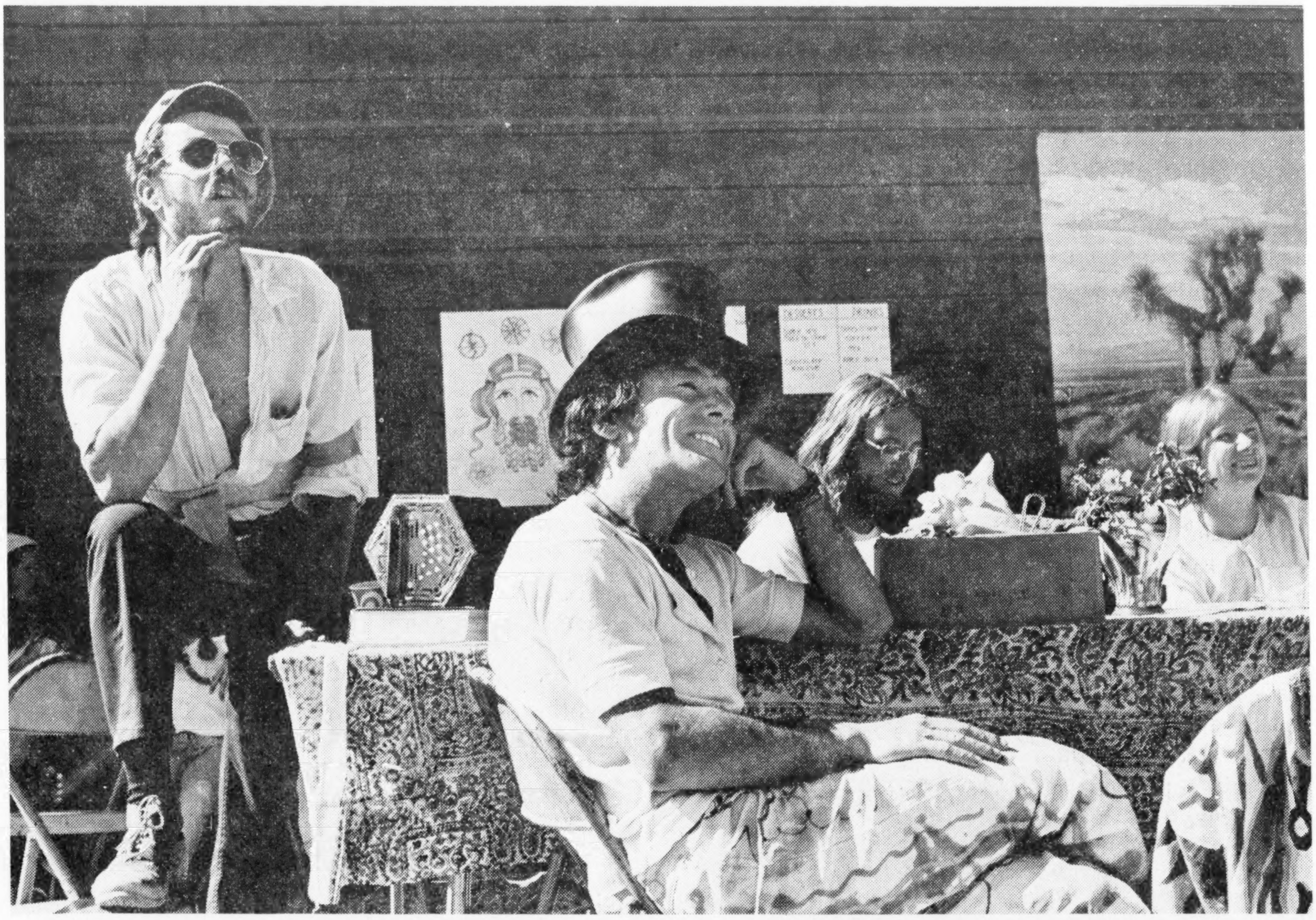
- The prospect of running out of cheaply available, critical, industrial raw materials
- The prospect of chronic energy shortages and a difficult transition to a much more energy-efficient economy
- The growing threat that before we run out of material resources in any absolute sense we will pollute ourselves to death with the intrusion of many thousands of hazardous substances into our living environments and food chains
- Rising material demands of the third and fourth world, coupled with climatic changes which may induce periodic but massive famine in certain areas, coupled with the growing threat of terrorism (conventional, nuclear, biological), coupled with the growing vulnerability of the highly complex and interdependent technology (e.g., communications, energy, and transportation systems) common to developed nations
- The changing balance of global power, given rapid nuclear proliferation
- The poverty of abundance – growing dissatisfaction with the output of our industrial society as the sole or even primary reward and reason for our individual existences
- Challenge to the legitimacy of leaders in nearly all major institutions – both public and private
- Apparent loss of social purpose and direction coupled with rising levels of individual alienation
- Chronic and pervasive fiscal crisis of many of our largest cities, coupled with an historic and unexpected turnaround in migration patterns (the net flow is now to small towns and rural areas)
- Decline in the expected number of meaningful work roles, coupled with growing levels of automation, coupled with chronic underemployment and unemployment
- The prospect that we have created social bureaucracies (at the federal, state, and local levels) of such extreme levels of scale, complexity, and interdependence that they now exceed our capacity to comprehend and, therefore, to manage them; coupled with growing protests that we are becoming an excessively overregulated society, coupled with growing demands upon government at all levels
- Growing demands that domestic economic inequities be moderated, coupled with the prospect of a little or no growth economy in the foreseeable future, yielding the spectre of intense competition for a fixed or slowly growing pie.

[more→]

52 WHARF
CLOTHES
2ND HAND
&
ORIGNAL DESIGN
BY
BOLINAS FOLK
FRI. SAT.-SUN.
12-6

Ilka Hartmann

A successful small-town fashion designer who works strictly with second-hand clothes – a value-added version of the "free-box" common in VS communities.


Ilka Hartmann

We're talking about diversity, among lives and within lives.

Resolution of problems such as these will likely push our society in a direction which is more ecologically conscious, more frugal in its consumption, more globally oriented, more decentralized, more allowing of local self-determination, and so on. To some considerable extent, it appears that resolution of these increasingly serious problems will push in a direction at least similar to that implied by the pull toward voluntary simplicity.

III. Patterns and Dimensions of Voluntary Simplicity

WE THINK THERE ARE at least two very distinct kinds of people fully living the VS way of life. The first, and less numerous of the two, consists of a heterogeneous group of families and individuals who have voluntarily taken up simple living following years or decades of active involvement in the mainstream. The motivations of such people tend to be highly private and specific – desire to escape the "rat race," personal disillusionment, boredom with the job, the desire to live a less plastic life, and so on. Such changes in life style make good copy and hence this type of phenomenon gets much publicity. In terms of numbers, this group does not appear very significant. However, as a model for others to emulate, this group may be profoundly important.

The other type tends to be younger, more motivated by philosophical concerns, more activistic, and more given to promoting the VS view. Since no survey has yet been made explicitly for the purpose of defining the demographics of adherents to VS, we are forced to surmise their characteristics based on the attributes of related groups (such as environmentalists, consumerists, members of "human potential" movements, those operating Briarpatch businesses, etc.) on which some data are available. Based on this kind of inferential evidence, the second group of adherents to voluntary simplicity appear to be:

- Predominantly young, the large majority being in their 20s or 30s
- Evenly divided among the sexes
- Preponderantly single, although many young families are included
- Almost exclusively white
- From middle or upper class backgrounds
- Exceptionally well educated
- Bimodal in income, over a fourth (mostly students) having annual incomes under $5,000 and another fourth having incomes over $15,000
- Independent politically – uncomfortable with the standard labels
- Largely urban residents, although many would like to live in small town or rural environments

Numbers and Degrees of VS

We have found it useful to think in terms of four distinct categories of voluntary simplicity.

1. *Full Voluntary Simplicity.* Our best guess is that only 4 to 5 million adults (3% of the adult population) fully and wholeheartedly live a life of voluntary sim-

plicity. These people constitute the active, leading edge of the trend toward simple living and are found in all parts of the country.

If we had to draw a caricature of the life-activities characteristic of this group it would include: organic gardening, recycling, natural foods, simple clothing, biking to work, back packing on vacations, family oriented, engaging in meditation or other growth processes.

2. *Partial Voluntary Simplicity*. A second group we call "partial" adherents to voluntary simplicity. This group is probably about twice as large as the first (with some 8 to 10 million adults). These persons adhere to and act on some, but not all, of the basic tenets of voluntary simplicity. These persons are scattered throughout the adult population – probably a greater proportion of them are middle age and middle class, but they are still predominantly white and predominantly urban.

3. *Sympathizers toward Voluntary Simplicity*. Polls cited later suggest that a large fraction of the total adult population – almost surely exceeding one-third and perhaps as large as one-half – sympathizes with many values associated with voluntary simplicity but, for one reason or another, this group does not presently act on this sympathy. We call these people sympathizers toward voluntary simplicity.

4. *Indifferent, Unaware, or Opposed to Voluntary Simplicity*. Finally, we estimate that at least half of the population falls into the category of being indifferent to, unaware of, or opposed to voluntary simplicity. This group draws its numbers from both ends of the income spectrum. First there are those who are involuntarily simple – that is, who live in poverty and have not yet experienced the life of abundance. These people oppose VS because they are unwilling to forego the opportunity to strike it rich. Second, at the other income extreme, there are those who are strongly achievement oriented and see simple living as a threat to their style of life.

It appears that, of these four categories, the sympathizers will play a pivotal role. Their numbers are so large that they constitute a major reservoir of dormant support for voluntary simplicity. Depending upon the pushes and pulls that tug at our society as we make our way into the future, this way of life could have enormous growth potential, as we shall see later.

On what basis do we offer the foregoing estimates of numbers of adults in the various categories of voluntary simplicity? The estimates can be inferred by observing the ebbs and flows of related movements ranging from consumerism to concern with consciousness research. However, the dimensions of voluntary simplicity are most clearly indicated in a variety of opinion studies. A few of these are summarized below:

- In a poll published in May 1976, the Roper organization found that 51% of Americans believe the nation "must cut way back" on production and consumption to conserve resources and keep the economy strong. Only 45% felt that traditional life styles can continue unchanged.

- Louis Harris in late 1975 reported the following results from his polls. To reduce consumption of physical goods and products:

  - 92% of Americans are willing to eliminate annual model changes in automobiles.
  - 91% are willing to forego meat for one day a week.
  - 90% are willing to do away with annual fashion changes in clothing.
  - 82% are willing to reduce the amount of advertising.
  - 73% are willing to wear old clothes (even if they shine) until they wear out.
  - 73% are willing to prohibit the building of large houses with extra rooms that are seldom used.
  - 57% are willing to see a national policy that would make it much cheaper to live in multiple-unit apartments than in single family homes.

Harris concludes: "When the alternative is posed between changing our life style to have less consumption of physical goods, on one hand, and enduring the risks of continuing inflation and unemployment on the other, by 77% to 8%, the American people opt for a change in life style."

- A very different kind of study was reported in the final 1975 issue of the **Harvard Business Review**. Asked to compare "Ideology I" (the traditional American way prizing most the values of rugged individualism, private property. and free competition in an open marketplace) with "Ideology II" (communalism in which the rights and duties of the individual are determined by the needs of the common good), U.S. readers preferred I to II by 70% to 29%. More important for this discussion, 36% thought Ideology II to be dominant today, 38% thought it more effective in solving problems in the future, and 73% thought it would dominate in the U.S. by 1985.

- Concern with the inner life also has a very broad base of support. For example, the firm of Yankelovich, Skelly, and White finds that some 80% of the population is interested in developing better self-understanding through the inner search for meaning. A 1975 poll conducted by the National Opinion Research Corporation found that over 40% of American adults have undergone what they regard as a genuinely "mystical" experience. In 1974 Roper found that 53% of Americans believe in the existence of ESP – a belief, incidentally, that correlates strongly with education and income. A 1976 Gallup poll found that 12% of the American people are "involved in" or "practice" some mystical discipline.

- Another indicator of support for VS is the fact that books like **Small is Beautiful**, **The Whole Earth Catalog**, and **Limits to Growth** each have sold millions of copies.

- Finally, one might point to the remarkable acceptance of California Governor Edmund Brown, Jr.'s personal and political posture with regard to frugality and ecology. Further, it seems significant that both President Carter and ex-President Ford have gone on record as supporters of the view that more is not necessarily better.

[more →]

The foregoing data prove nothing, but as a set or pattern of evidence they do seem suggestive. They seem to indicate (1) a receptivity on the part of Americans to a change in life style, (2) sympathy for values and attitudes congruent with voluntary simplicity, and (3) a wide base of interest in the inner dimension of life.

Prospects for Growth

A crucial question concerns the outlook for the growth of voluntary simplicity as a way of life. We estimate that the maximum plausible growth of VS would yield the following figures:

Maximum Growth of VS
(Millions of Adults)

	1977	1987	2000
Full VS	5	25	60
Partial VS	10	35	60
Sympathizers	60	50	25
Indifferent or Opposed	75	60	55

These figures suggest that possibly 10 million adults follow VS tenets today (if we assume 5 million "full VS" plus 50% of "partial VS"). Their combined numbers could exceed 40 million by 1987 and 90 million by the year 2000. This is, for a basic sociological phenomenon, an extraordinary rate of growth. Even so, less than a third of the adult population would be fully living this way of life 23 years from now.

To attain the degree of growth shown in the table, we think several conditions would have to be present.

- First, the push pressures described earlier would have to continue to mount rather than decline. Efforts to overcome them would have largely to fail, for whatever reasons. At the same time, however, the nation would have to avoid a truly severe economic depression or else involuntary simplicity (i.e., poverty) would largely replace voluntary simplicity.

- Second, VS would have to prove a rewarding and nourishing way of life to many millions of people who have little experience with the day-to-day realities of living simply. Attempts to live simply are sometimes abandoned because it doesn't yield the expected inner rewards, because it is too demanding or too lonely, or because changed family circumstances (e.g., having children) require a return to a less extreme life style. Some observers feel that VS makes such large demands on both inner and external resources of people and is at such profound odds with traditional American achievement and material values that only a relative few will be able to live the simple life happily. Hence, they argue, VS will not prove a viable national solution to the problem it addresses. Other observers have no such qualms.

- Third – and perhaps most important – a mass production, high-productivity sector of the economy will have to coexist with the VS sector in order to maintain standards of living; otherwise, the aggregate decline in living standards could be so great as to invite social and economic revolution. There appear to be no mechanical or philosophic reasons why frugality and simplicity cannot coexist with high technology and the profit motive. However, it is not clear whether or not antagonisms between the two life ways would permit the minimal – but essential – levels of cooperation.

Even if voluntary simplicity does expand in the coming quarter century to the degree indicated, it is not likely to emerge in the smooth fashion suggested by the numbers in the table. Rather, it will develop (to whatever extent) with jumps and drops and plateaus, reflecting a variety of specific events, perceptual insights, charismatic leaders, and many types of regulatory and legislative policies. It is also possible that voluntary simplicity will progress unobtrusively in the form of countless millions of small, unannounced decisions made so inconspicuously that almost no one is aware of the total effect until, suddenly, it is clear that a major values transformation has occurred.

IV. Future Social Implications

THE LONG RUN social ramifications of voluntary simplicity – if it develops into a major social movement – are enormous. Widespread adoption of the social goals and characteristics implied by the value themes underlying voluntary simplicity would surely mark a deep and perhaps permanent alteration in the nature of the American dream. The eventual result could be the creation of a social order that is as different from the present as the industrial era was different from the Middle Ages.

The reason that the potential social implications are so vast is that voluntary simplicity does not represent merely an internal readjustment of the prevailing values pattern but rather constitutes a fundamental shift in that pattern. Widespread adoption of this way of life could launch our society on a new developmental trajectory.

We are by no means suggesting that voluntary simplicity offers the only approach to a viable cultural and economic future. However, the United States and many other developed nations seem to be in a period of social drift. They appear to be losing both momentum and a sense of direction. People seem to be waiting for some leader or chain of events to make clear the nature of an alternative social vision. The uncertainty, indecision, and growing anxiety over appropriate social direction has prompted a new willingness to "think the unthinkable," to deeply consider what life means and where we wish to go. Voluntary simplicity as a coherent, broadly relevant, practical and purposeful world view could provide an important point of reference or anchoring point as our nation begins searching for and experimenting with new social forms.

Alternative Futures

Although VS as a way of life may have great and obvious long run significance, it seems at present to be struggling to achieve a critical mass of social awareness and acceptance. We have said that it could grow to major proportions by the year 2000. On the other hand, under some circumstances the movement could fade away. If we are to understand the prospects of voluntary simplicity, we must attempt to understand

Ilka Hartmann

The sort of thing that rich kids do, or farm kids do, only these are neither.

the nature and dynamics of the larger social context out of which this way of life could emerge.

There is great uncertainty regarding the future course of social evolution in the United States. Although the future is fundamentally uncertain, there are four alternative societal social futures which we feel bound much of the domain of social possibility over the next several decades. These are:

1. *Technological Salvation* – This is a future where, with good luck and great ingenuity, we find the social will and technological know-how to cope with critical national problems and continue along a trajectory of relatively high material growth. This future assumes that the value premises of the industrial era (rugged individualism, rationalism, material growth, etc.) will withstand current challenges and provide people with meaningful and workable living environments.

2. *Descent into Social Chaos* – This is a future in which the society is torn by divisions and tensions among competing interest groups. There is no cataclysmic demise – just the grinding, unrelenting deterioration of the social fabric as crisis is compounded by crisis amidst diminishing public consensus as to how to cope with it all. Inept bureaucratic regulation and unforeseen events (such as severe climate changes) could change the drift toward social chaos into a rush.

3. *Benign Authoritarianism* – Despite the growing public pressure for and acceptance of the need for fundamental social change, the large, complex and highly interdependent bureaucracies in both public and private sectors could thicken and, like slowly hardening concrete, lock people into an inescapable net of regulations and institutions. This could be a benign authoritarianism which emerges from the unstoppable logic of well-intended bureaucratic regulation which seeps into nearly every facet of life.

4. *Humanistic Transformation* – One expression of this alternative could be a future in which the underlying value premises shift and two closely related ethics emerge. First is an ecological ethic that accepts our earth as limited, recognizes the underlying unity of the human race, and perceives man as an integral part of the natural environment. Second is a self-realization ethic that asserts that each person's proper goal is the evolutionary development of his fullest human potentials in community with others. Each ethic could serve as a corrective for possible excesses in the other. This could be a future that substantially embraces voluntary simplicity or some similar way of life that, though materially more modest than current life styles, is overall more satisfying.

These four thumbnail sketches of alternative futures present an enormous range of social possibility. Yet, to the extent that each of these is a plausible future, its seeds must exist in the present. Therefore, they need not be mutually exclusive social futures. For example, we can imagine a plausible future marked by both a humanistic transformation and by technological success (although it may be "appropriate" rather than "high" technology that underlies that success).

One way to test the viability of voluntary simplicity as an emergent way of life is to assess the extent to which it could assume a significant role in all four of these futures. In other words, is this a social movement that has relevance only in the context of a future of humanistic transformation, or could it plausibly play a major role in the other three futures as well?

A future marked by "technological success" would probably still require people to attack the problems of resource scarcity, environmental pollution, and global economic inequities by consuming less. To the extent that there is a continuing need to approach these and related problems from the demand side, there will be a corresponding role for voluntary simplicity even in this materially successful scenario.

[more →]

In a society of growing internal strife and tension, voluntary simplicity could, in the short run, exacerbate that conflict. In the longer run, however, VS might help to alleviate social tensions. To the extent that voluntary simplicity provided a way of life that transcended traditional interest group conflicts and provided a meaningful and workable response to a worsening social condition, it could alleviate tensions by directing social energy in a more coherent and harmonious direction.

In a society marked by growing bureaucratic regulation and erosion of democratic processes, voluntary simplicity (with its emphasis on local self-determination, human scale, and self-sufficiency) could provide a healthy corrective and counterbalancing force. Voluntary simplicity could provide an important source of grass roots innovation and vitality to what otherwise could be an increasingly rigid and sombre society.

The important point that we draw from this is not a prediction of the social future but rather noting the significance of voluntary simplicity in many alternative futures. To be sure, the size of this social movement would vary considerably depending on the social context into which it must fit. Nonetheless, there seems to be sufficient push and pull toward voluntary simplicity that it will not soon disappear from the social landscape.

Social Impacts

Assuming that voluntary simplicity will be a significant social force across a broad spectrum of societal futures, we now turn to consider the general nature of its impact. The discussion that follows is intended to be provocative rather than definitive – in hopes of stimulating further thought and comment.

What kind of society would emerge if voluntary simplicity were to become the predominant way of life? A partial answer to this question can be found by examining stereotypical contrasts between the value premises and social characteristics of the industrial "world view" and the voluntary simplicity "world view." *Table 1* presents an illustrative array of contrasting value premises and social attributes. Several important insights emerge from this table. First, voluntary simplicity seems to constitute a broadly based attempt to moderate, in the short run, and transcend, in the long run, the industrial world view. Voluntary simplicity implies going beyond material growth to include evolution among more subtle (but no less important) dimensions of life. A second pattern revealed by this table is that the values cluster embraced by voluntary simplicity represents at least as coherent a world view as the industrial world view (which has powered our social vision and industrial development for nearly two centuries.) Lastly, voluntary simplicity does not appear to be a movement whose domain of social impact can be narrowly defined; rather, it reaches out and touches a great many aspects of life.

Michael Phillips

A Briarpatch entrepreneur – Carole Rae Tapestries in San Francisco.

Table 1 can do little more than hint at the social implications of voluntary simplicity. Therefore, we turn to look deeper across a sampling of these dimensions. Presented below are some of the plausible, long run directions of social change that seem congruent with voluntary simplicity – assuming this way of life were adopted by a majority of the population.

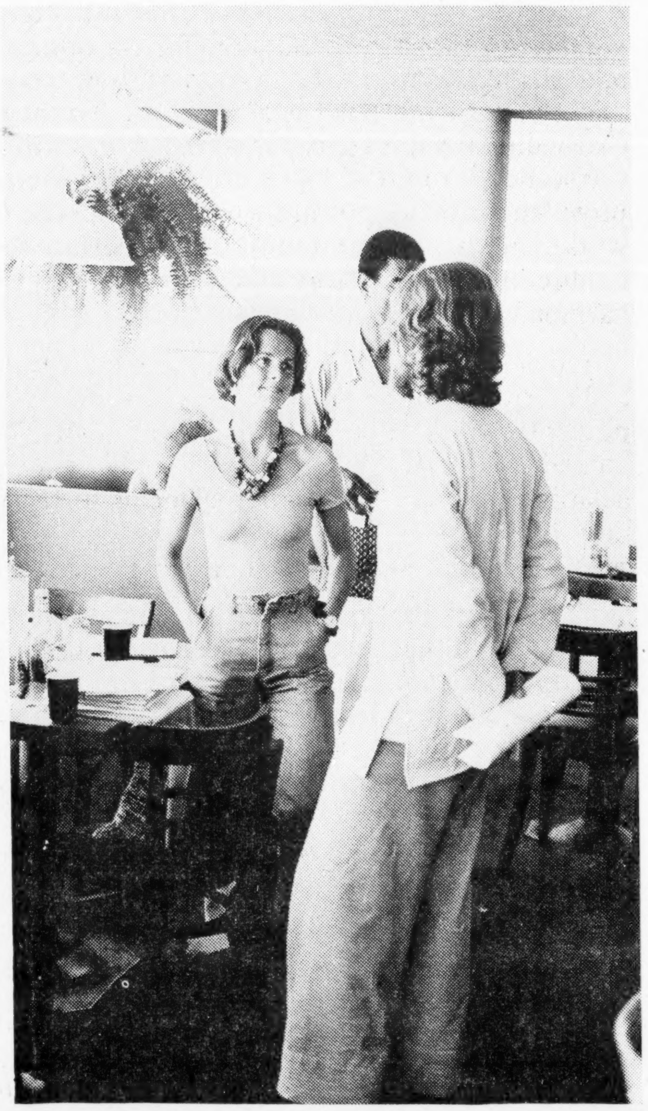
National Tenor – A society in which a large proportion of the population adopts voluntary simplicity would probably have a uniquely different "feel" to it. Although admittedly speculative, we think that such a society would likely possess a greater sense of frontier spirit, a feeling of continuing challenge at the prospects of forging new, evolving relationships among individuals, societies, nature, and the cosmos. Although some would likely view this as an escapist retreat from problems or a faddish response to soon-to-be solved difficulties, overall the VS oriented society would have a high degree of cultural cohesion, social maturity, and social consensus. People would likely be settling in for the long haul and hence would have a greater sense of future destiny and the conviction they were working on behalf of future generations as well as for themselves. The culture would likely be more open, less tense and serious, and more tolerant. There might be a higher degree of and delight in social diversity. There would likely be a rebirth of a sense of geographic community and regional spirit and a grass roots renaissance in the arts.

Material Growth. Society would tend to move from a goal of material abundance to a goal of material sufficiency. What level of material sufficiency is appropriate would largely be decided by individual choice constrained by resource availability and prevailing cultural norms. Clearly, this presumes a strong cultural context with widely shared beliefs as to what constitutes appropriate levels of material sufficiency. Although material growth may tend toward a steady-state condition, this need not imply a materially static society. With selective growth, some sectors of the economy would grow rapidly while others would contract. For example, growth in appropriate technology might be rapid while production of items of conspicuous consumption declines.

Table 1

CONTRASTS BETWEEN INDUSTRIAL WORLD VIEW AND WORLD VIEW OF VOLUNTARY SIMPLICITY

EMPHASIS IN INDUSTRIAL WORLD VIEW	EMPHASIS IN VOLUNTARY SIMPLICITY WORLD VIEW
Value Premises	*Value Premises*
Material growth	Material sufficiency coupled with psycho-spiritual growth
Man over nature	People within nature
Competitive self-interest	Enlightened self-interest
Rugged individualism	Cooperative individualism
Rationalism	Rational and intuitive
Social Characteristics	*Social Characteristics*
Large, complex living and working environments	Smaller, less complex living and and working environments
Growth of material complexity	Reduction of material complexity
Space-age technology	Appropriate technology
Identity defined by patterns of consumption	Identity found through inner and interpersonal discovery
Centralization of regulation and control at nation/state level	Greater local self-determination coupled with emerging global institutions
Specialized work roles — through division of labor	More integrated work roles (e.g., team assembly, multiple roles)
Secular	Balance of secular and spiritual
Mass produced, quickly obsolete, standardized products	Hand crafted, durable, unique products
Lifeboat ethic in foreign relations	Spaceship earth ethic
Cultural homogeneity, partial acceptance of diversity	Cultural heterogeneity, eager acceptance of diversity
High pressure, rat race existence	Laid back, relaxed existence


Michael Phillips

A Briarpatch entrepreneur – China Galland of Women in the Wilderness (a female Outward Bound) at the New York City Deli, another San Francisco Briarpatch operation.

Human Growth. The society would tend to transfer its growth potential and aspirations from a material dimension to an increasingly nonmaterial dimension. This shift would be of the highest import if, as many suggest, our present problems arise in part from a gross disparity between the relatively underdeveloped internal faculties of man and the extremely powerful external technologies at his disposal. Society would attempt to achieve greater balance by fostering a degree of interior human growth that is at least commensurate with the enormous exterior growth that has occurred over the last several hundred years. This implies that our nation would increasingly become a trustee of conscious evolution on this earth, and, in doing so, endeavor to act with a level of awareness equal to the power and responsibility inherent in that role. The implication is that the nation's industrial prowess could provide, with suitable guidance, the material base to support the pervasive and intentional evolution of individual and socio-cultural awareness. Seen in this light, a trend toward voluntary simplicity is a logical evolutionary extension in our civilizational growth.

Life Environment. Society would tend to shift from living and working in large, complex environments to living and working in smaller, less complex environments. Accompanying this might be migration from large cities to small cities, towns, and the country. Such trends would probably stimulate grass roots social action, revitalize the sense of community, and produce stronger, more distinctive clusters of neighborhoods.

Identity. The VS society would tend to define personal identity less in terms of consumption than in terms of one's awareness – psychological, social, spiritual. For many Americans consumption is not only an expression of identity but is basic to the sense of identity. The growth of voluntary simplicity would tend to produce a cultural perspective in which identity could be expressed in many other ways, such as experimenting with various forms of voluntary simplicity; developing vital communities through new forms of group and extended family relationships; exploring human consciousness through the hundreds of consciousness expanding disciplines, ranging from meditation, biofeedback, hypnosis, encounter, bioenergetics, and so on.

Technology. Society would tend to move from "high" or "space age" technology to the careful application of "intermediate" or "appropriate" technology. Just as the industrial era was built on high technology, the voluntary simplicity era would likely rely on technology that is explicitly designed to be ecologically sound, energy-conserving, low polluting, comprehensible by many, integrated with nature, and efficient when used on a small scale.

Politics. If voluntary simplicity were to emerge as a dominant way of life, much of its growth would likely be driven by political activism at a grass roots level. Extensive decentralization of institutions would require that local communities take much greater responsibility for the well being of their population. Politics would probably assume a more humanistic orientation as people came to see the intimate connection that exists between the processes of personal growth and social change. Politics would thus be infused with a higher degree of honesty, compassion, and integrity. There might emerge new political coalitions and a greater number of political parties. There would also likely be greater self-righteousness, more frequent appeals to spiritual symbols in attempting to find political consensus, persistent tension between those holding the voluntary simplicity view and those adhering to the industrial world view, confusion concerning the equity and scope of programs conceived and administered at the local level, and so on. Overall, it probably would be a society in which political processes were more experimental, error embracing, and intentionally seeking diversity.

Global Environment. The emergence of an America dominated by the philosophy of voluntary simplicity would undoubtedly lead to many changes in international policies. A few are suggested below:

- Support for international bodies dealing with issues such as defense, food, energy, conservation, pollution, critical resources, regulation of nuclear activities, and so on.
- Reduction in trade barriers and greater economic and technical assistance to developing nations
- Much more cultural interchange
- Moderation of power politics, with the U.S. attempting to exert moral rather than economic or military leadership.

If our policies were successful, the U.S. might ultimately emerge as a symbol of human rights, a source of sophisticated aid in technological problems, and the leader in building a worldwide sense of unity among all peoples everywhere.

V. Business Implications

THE ADVENT OF A LARGE SEGMENT of the population acting fully or partially in accord with VS tenets would have a major impact on business. The highlights of these implications are sketched below:

Income Patterns

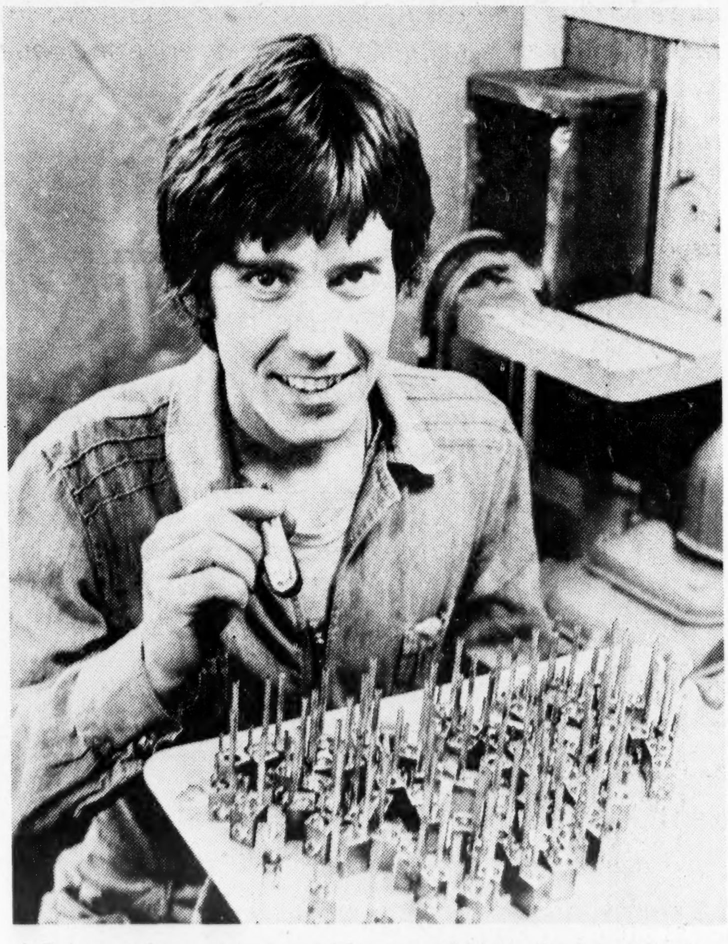
Our back-of-the-envelope estimates are that this way of life would not reduce Gross National Product as much as might be expected; rather, adoption of simple living by roughly a third of the adult population (such that their consumption levels were halved), in the year 2000 would, we think, reduce personal income available to consumers by only about 15% over our present levels. The biggest effect would likely be on the pattern of aggregate consumption and on moderating the level of growth.

Those businesses that view voluntary simplicity as an opportunity rather than a threat would likely find this to be perhaps the fastest growing consumer market of the coming decades. Our rough estimates (calculated at 100% of the spending of "full" VS consumers and 50% of "partial" VS consumers), suggest that consumption with a VS orientation could plausibly rise from about $35 billion today to perhaps $140 billion a decade hence, and to well over $300 billion in 2000 (all in 1975 dollars). This growth seems more than ample to engage traditional business and also to support large numbers of new firms – such as the Briarpatch Network – started to serve VS consumers.

The growth of voluntary simplicity almost surely would lead to an increasingly bimodal income distribution. The enduring disparity between rich and poor in our society would likely grow in magnitude as VS income patterns (although motivationally quite different) would look increasingly like those who were involuntarily simple or poor. How long this gap would persist is an open question. For a substantial proportion of the population – and particularly the poor – we think an equitable redistribution of income would be a precondition for voluntary frugality.

Consumer Markets

As indicated earlier, VS consumption criteria are significantly different from traditional patterns. The person living the simple life tends to prefer products that are functional, healthy, nonpolluting, durable,


Michael Phillips

A Briarpatch entrepreneur (there are 220 in the Bay Area) – Phil Jorgenson of Proto-Pipe in Berkeley, "the finest grass/hash pipe manufactured."

repairable, recyclable or made from renewable raw materials, energy-cheap, authentic, esthetically pleasing, and made through simple technology. Such criteria will adversely affect many products of conspicuous consumption. On the other hand, the VS life style should create excellent markets for such items as:

- First class durable products, such as solid wood furniture, high quality music and television systems, top-grade hand tools, geared bicycles
- Sturdy cotton and wool clothing deemphasizing fashion, which can be mended, handed down, and worn for years
- Do-it-yourself equipment for home construction, home repair and improvements, cooking, gardening, entertaining, and so on
- Inexpensive prefab "flexible" housing
- Easy-to-fix autos and appliances, perhaps using modular construction
- Healthy, "natural," unprocessed foods
- Self-help medical, childcare, housekeeping items
- Products for arts and crafts and other esthetic pursuits
- Simple, safe, nonplastic, nonmetal toys and games for children
- Products or services associated with shared tasks in communal living, cooperatives, recycling, and energy reduction and food conservation projects
- Leisure activities geared to country living
- Imaginative ways of refurbishing old city and country homes
- Traveling car repair and parts services
- Machines, equipments, and systems utilizing intermediate technology

Prices

Many prices would increase substantially to meet the qualitative demands of the market; the market will be unwilling to accept varying profit margins (i.e., profit will increasingly be based on a "cost-plus" basis) and will no longer tend to reflect the market's willingness to pay a premium for style, fashion, or fad. Price will more often be in terms of barter or "energy exchange." "Bulk" purchasing of nondurables should be anticipated as a frugal market response to unit pricing.

Outlets

A growing and appreciable portion of market activity will take place in the "alternative marketplace": flea markets, garage sales, classified advertising, community bulletin boards. Consumer cooperatives and mailorder operations will increase as VS consumers become less willing to support superfluous merchandising costs. Purchases will be increasingly localized to diminish the costs of transportation and to encourage the utilization of intermediate technology.

[more →]

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VOLUNTARY SIMPLICITY QUESTIONNAIRE

Voluntary Simplicity research is starved for data. Conceivably your reply to this questionnaire could help move business and government to serve your needs better. In any case the authors will publish results of the survey in a forthcoming **CQ**. *Be as brief or eloquent as you want.*

–Stewart Brand

To help us all understand the nature of Voluntary Simplicity, the authors of this article would be grateful if you would respond to this questionnaire and send it to:

Duane S. Elgin or Arnold Mitchell
P.O. Box 2483
Menlo Park, CA 94025

Name (optional) ______________________

Address (optional) ______________________

1. Age: __________ 2. Sex: Male ☐ Female ☐

3. Married ☐ Single ☐ or Living Together ☐

4. Race: White ☐ Black ☐ Brown ☐ Other __________

5. Personal Annual Income:
   - Under $3,000 ☐
   - $3,000 - $5,000 ☐
   - $5,000 - $8,000 ☐
   - $8,000 - $12,000 ☐
   - $12,000 - $16,000 ☐
   - $16,000 - $25,000 ☐
   - Over $25,000 ☐

6. Education:
   - No highschool diploma ☐
   - High school graduate ☐
   - Some college ☐
   - College graduate ☐
   - Some post graduate schooling ☐
   - MA or MS or equivalent ☐
   - Ph.D., LLD, MD or equivalent ☐

7. Politics:

   Democrat ☐ Republican ☐ Independent ☐
   Other ______________________

8. Place of Residence:
   - ☐ Rural (country)
   - ☐ Small rural town (under 10,000)
   - ☐ Suburban town (under 100,000)
   - ☐ Small city (100,000 - 500,000)
   - ☐ Big City (over 500,000)

9. Would you characterize your family during your childhood and adolescent years as being:

   ☐ low ☐ middle, or ☐ high income?

   (High would be today's equivalent of $25,000, or more; low would be today's equivalent of $5,000 or less).

[More questionnaire →]

Specialty stores will likely increase, especially for food (home canning apparatus and utensils for greater self-sufficiency); shelter (energy conservation technology, materials-efficiency guidelines); and clothing (kits).

Promotion

New styles of advertising and promotion will tend to replace traditional types of sensational, emotional, and image appeals. Although an interesting and "aware" image will be important, the aim of advertising and promotion will be to help the consumer gain useful (rather than solely persuasive) information. The advertising will be more closely associated with the product or service being promoted. False or misleading advertising will be taken not as exaggerated puffery but as evidence of the advertiser's lack of concern for others – a message of "you versus us" instead of "we together." Appeals aimed at product quality, utility, durability, and service will likely be more successful, although the marketplace undoubtedly will have its share of "clique products." Keeping-up-with-the-Joneses will diminish in importance, but the popularity or market acceptance of a product will be an important promotional criterion.

Work Roles

In a simple living society the role of work would be downplayed as a status and power symbol and upgraded as a means of contributing to the collective good. Cooperation rather than competition would be the hallmark of work. Complaints would be directed more toward matters of ethics, social responsibility, and esthetics rather than issues of pay, office size, and promotion. Very likely there would be many more part-time jobs, enabling people to earn enough to fulfill their essential needs and yet have much more free time to pursue personal development and perhaps aid others.

Significantly, management would tend to be highly participative, be organized around tasks, and to be less hierarchical than at present. Ultimately, the traditional proprietary attitudes of business might yield to greater openness and inter- and intraindustry cooperation. The aggressive expression of the profit motive (exemplified by "making a killing" rather than "making a living") – although it is not likely to vanish in the near future – would likely be a diminishing force in business.

Consumerism

It seems likely the advocates of voluntary simplicity will, as a consumer group, continue to exert political and economic pressure to change business and industrial practices. A trend toward VS implies no abatement of activistic consumer movements directed toward such specific issues as safety, pollution, con-

cut here → -

10. Are you now practicing or actively involved with a particular inner growth process? (Check those that apply).

- ☐ Traditional religion (e.g., Catholicism, Judaism, Christianity)
- ☐ Meditative discipline (e.g., TM, Zen, Yoga)
- ☐ Psychotherapy (e.g., Freudian, Jungian, Behaviorist)
- ☐ Human Potential (e.g., encounter, gestalt, psychosynthesis, rolfing)
- ☐ Other (e.g., biofeedback, hypnosis, mind expanding drugs, etc.)

11. To what extent do you feel supported by friends and larger community in pursuit of your inner growth processes?

- ☐ Discouraged
- ☐ Tolerated (neither encouraged nor discouraged)
- ☐ Some support
- ☐ A great deal of support

12. Would you describe yourself today as living a life of:

- ☐ "full" voluntary simplicity (see pages 10 and 11 for definition)
- ☐ "partial" voluntary simplicity
- ☐ sympathetic only
- ☐ indifferent to it
- ☐ opposed to it
- ☐ unaware of it

13. If you are fully living the VS style, could you please help us understand what this means by commenting on the questions below:

a. At what age and under what circumstances did you consciously start to live simply?

b. Why did you take up voluntary simplicity?

c. What are the major changes in living arrangements you made as a result?

d. Please comment on the satisfactions and dissatisfactions associated with this way of life.

e. Do you see it as a movement that is likely to spread rapidly? Why or why not?

14. If you rate yourself as a "partial" adherent to voluntary simplicity:

a. In what ways are you acting in VS style?

b. In what ways are you not acting in VS style?

c. Do you expect to become ☐more so, ☐less so, or ☐remain the same for the foreseeable future? Why?

d. What kinds of things would prompt you to embrace more fully a life style of voluntary simplicity?

15. If you are sympathetic to VS but not acting substantially on your sympathy, could you say why you are not and what might trigger you to change your life style in the direction of VS?

16. If you are opposed to voluntary simplicity, could you give us your main reasons why?

17. Did you disagree with parts of this article? If so, what parts?

18. Do you think we omitted important points?

Thanks tremendously for your help.

Duane S. Elgin
Arnold Mitchell

servation, land use, ecological balance, and others. Some of these movements could have extensive implications for business.

As individuals, VS people may very well try to influence business by buying in accord with rating criteria applied to long lists of specific branded products and specific manufacturers, retailers, banks, and the like. Such activities, accompanied by word-of-mouth publicity, might be one way in which adherents of voluntary simplicity will try to enforce their sense of social responsibility.

VS Businesses

We think it likely that in many parts of the nation small businesses run by VSers for the VS trade will flourish. The Briarpatch network in the San Francisco Bay Area may prove to be one important template. Founded by Dick Raymond only a few years ago, the Briars have established several hundred individual firms in such areas as food and clothing stores, restaurants, book and magazine publishing (including **The CoEvolution Quarterly**), auto repair, baking, small-scale manufacture, child care centers, a toy company, etc. The Briarpatch network provides professional advice and services in a variety of domains including finance, advertising, insurance, charter flights, quantity purchasing, accounting and legal services, bartering opportunities, fund raising skills, and recruitment.

Michael Phillips

A Briarpatch entrepreneur – Susan Dague of Cottonfield in Berkeley which deals only in 100% cotton fabrics.

The increasingly fine **Briarpatch Review** *("a journal of right livelihood and simple living") costs $5/yr (quarterly) from: Briarpatch Review, 330 Ellis St., San Francisco, CA 94102.*

The operating principles of Briarpatch businesses are significant. They include:

- Job sharing, in which two or more people are paid for one position
- Job swapping through which people can occasionally try out other positions
- Multiple jobs or roles, in which a person might be the bookkeeper as well as a board member
- Functions are generally performed without titles. If a title exists, it would probably be Facilitator instead of President, "She buys everything" rather than purchasing agent
- Meditation is increasingly scheduled on the job
- If there are end-of-year surpluses, they are "recycled" in various ways. But generally there is a desire to help other projects rather than passive investors
- Directors serving as facilitators rather than watchdogs
- One favorite practice is to set prices according to the rule that the best price is what you would charge your friends.

VI. Conclusions

THE PHENOMENON we have called voluntary simplicity appears to be of deep social significance for three fundamental reasons.

First, it is a concept and a way of life whose time seems at last to be arriving. The idea of voluntary simplicity has been discussed for millenia. However, our present era of relative abundance contrasts sharply with the material poverty of the past. The voluntary assumption of a life materially simple and nonmaterially rich, therefore, is not only increasingly psychologically acceptable but physically feasible for perhaps the first time in history for large numbers of people.

Second, it specifically addresses the critical issues of our times – the problems of ecosystem overload, alienation, unmanageable scale and complexity of institutions, worldwide antagonism, and so on. Voluntary simplicity is a creative, comprehensive, and holistic approach to a host of problems customarily considered to be separate. By coping simultaneously with scores of interrelated specifics, voluntary simplicity seems to provide a solution that could not be achieved via the one-by-one route.

Third, it meshes with the eternal needs of individuals to continue to grow. The emphasis on the inner life inherent in voluntary simplicity permits people to grow psychologically even if material growth may be denied by events beyond their control. Further, there is reason to think that the kind of growth fostered by voluntary simplicity is especially appropriate to our times and circumstances. In brief, the need of the individual uniquely matches the need of the society.

Of what other emergent life patterns can these things be said? ▪

voluntary simplicity (1)

BY RICHARD GREGG

VOLUNTARY SIMPLICITY of living has been advocated and practiced by the founders of most of the great religions – Jesus, Buddha, Lao Tse, Moses and Mohammed – also by many saints and wise men such as St. Francis, John Woolman, the Hindu rishis, the Hebrew prophets, the Moslem sufis; by many artists and scientists; and by such great modern leaders as Lenin and Gandhi. It has been followed also by members of military armies and monastic orders – organizations which have had great and prolonged influence on the world.

Clearly, then, there is or has been some vitally important element in this observance. But the vast quantities of things given to us by modern mass production and commerce, the developments of science and the complexities of existence in modern industrialized countries have raised widespread doubts as to the validity of this practice and principle. Our present "mental climate" is not favorable either to a clear understanding of the value of simplicity or to its practice.

We are not here considering asceticism in the sense of a supression of instincts. What we mean by voluntary simplicity is not so austere and rigid. Simplicity is a relative matter, depending on climate, customs, culture, the character of the individual. For example, in India, except for those who are trying to imitate Westerners, everyone, wealthy as well as poor, sits on the floor, and there are no chairs. A large number of Americans, poor as well as rich, think they have to own a motor car, and many others consider a telephone exceedingly important. What is simplicity for an American would be far from simple to a Chinese peasant.

Voluntary simplicity involves both inner and outer condition. It means singleness of purpose, sincerity and honesty within, as well as avoidance of exterior clutter, of many possessions irrelevant to the chief purpose of life. It means an ordering and guiding of our energy and our desires, a partial restraint in some directions in order to secure greater abundance of life in other directions. It involves a deliberate organization of life for a purpose.

Of course, as different people have different purposes in life, what is relevant to the purpose of one person might not be relevant to the purpose of another. Yet it is easy to see that our individual lives and community life would be much changed if every one organized and graded and simplified his purposes so that one purpose would easily dominate all the others, and if each person then reorganized his outer life in accordance with this new arrangement of purposes – discarding possessions and activities irrelevant to the main purpose. The degree of simplification is a matter for each individual to settle for himself.

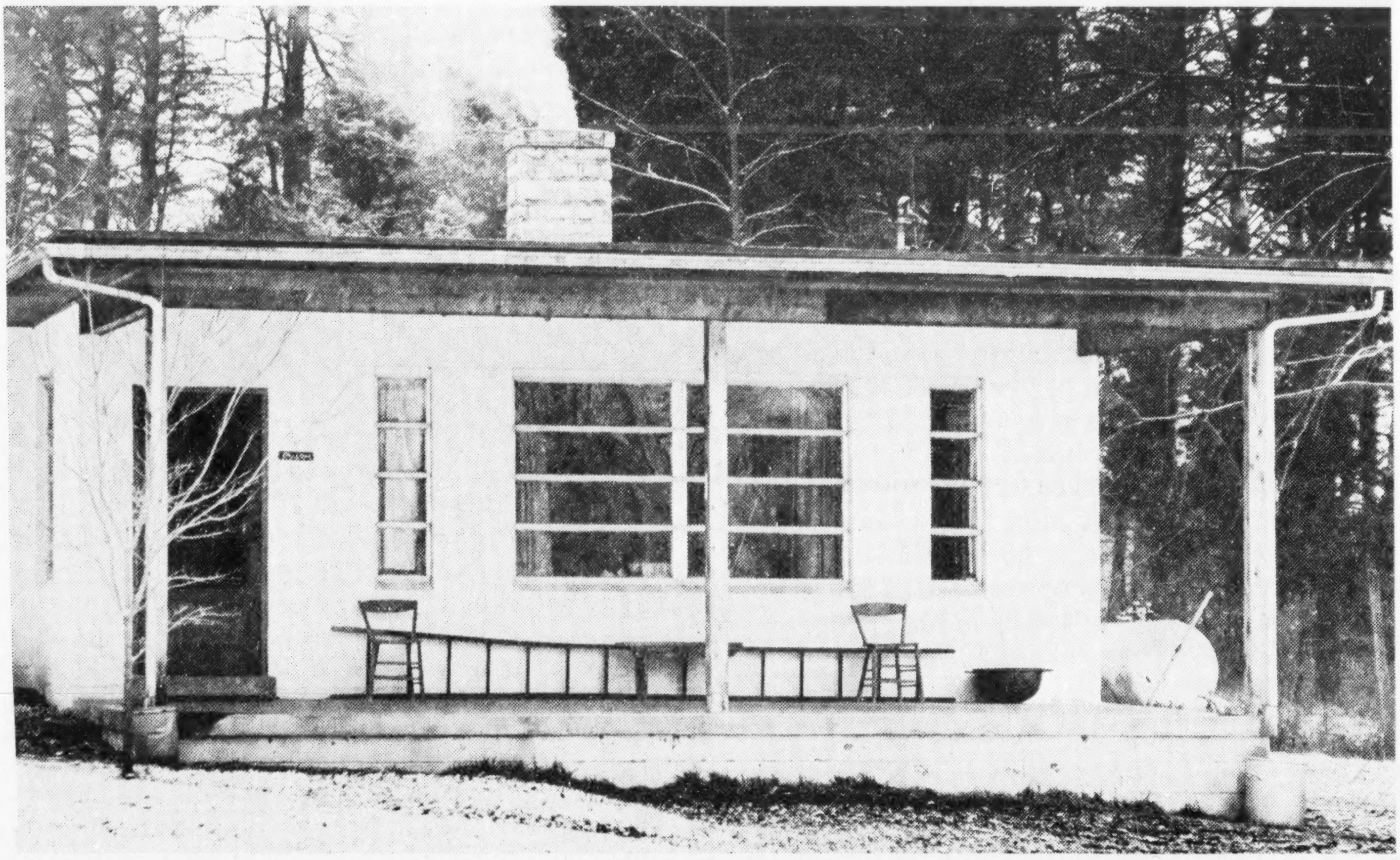
Since an emphasis on simplicity seems nowadays to many people a mistake, let us consider their doubts.

First of all, modern machine production seems to have solved the age-old condition of scarcity of the material things needed for life. Science and invention, industrialism, commerce and transportation have made it possible to produce and distribute more and better food, clothing, housing materials, tools and equipment, comforts, and luxuries than mankind has ever had hitherto. For an American, a stroll through a ten-cent store, a chain-grocery store and a department store, followed by a perusal of a catalogue of some of the large mail-order stores, is convincing on that score, to say nothing of what meets our eye on every street. Henry Ford's idea that civilization progresses by the increase in the number of people's desires and their satisfaction, looks sensible. The vast quantities of paper and ink devoted to advertisements add emphasis to that belief. The financial and social stability of every industrialized country seems to be founded on the expectation of an ever-expanding market for mass production. Russia, as well as capitalistic nations, has this aim. The whole world appears to be geared to this concept. Isn't it an anachronism to talk of simplicity in such an age? Complex as our paraphernalia is, does it not protect us against famine, disease, and extremes of temperature? Do not our tractors, electric lights, gas stoves, water pipes, electric refrigerators, house heating, airplanes, steam and motor transport, telephones, lift us beyond the threshold of animal existence, remove from us oppressive fears, give us a sense of security and at least the possibility of leisure? We must surely have leisure if civilization is to advance.

Another doubt comes readily to the mind of every parent. We all want our children to have every ad-

Here is the original Voluntary Simplicity article. It appeared in the September 4, 1974 issue of **Manas** *– a somewhat miraculously inexpensive and rewarding humanist journal which costs only $5/year (weekly!) from Box 32112, El Serena Station, Los Angeles, CA 90032.* **Manas** *introduced the article so: "This persuasive discussion by the late Richard Gregg, which may now be recognized as prophetic of present-day realizations, is reprinted in somewhat condensed form from the Indian journal,* **Visva-Bharati Quarterly** *for August, 1936, in which it first appeared."*

The illustrations are taken from **A Hidden Wholeness – The Visual World of Thomas Merton**, *which can be taken as a kind of graphic proof of all that Merton wrote. The book is still in print, still at its original 1970 price of $15 from Houghton-Mifflin in Boston.* *–SB*



Thomas Merton's hermitage at the Cistercian Abbey of Our Lady of Gethsemani at Trappist, Kentucky. John Howard Griffin, who took the photograph, writes, "At the outset he had neither running water nor electricity. He cut his own wood for the fireplace, cooked his meals in the fireplace or with a Coleman stove, used kerosene lamps. Later, when his health was less robust, he reluctantly consented to the installation of electricity and did his cooking on a two-burner hot plate. A few months before his trip to Asia, a small chapel and smaller bathroom were installed, along with some running water for washing, which turned out to be polluted. He continued to rely on water carted up from the abbey for drinking purposes. . . .

"Merton maintained his monastic discipline in the hermitage. He got up at 3:00 a.m. In his private journals he speaks with great happiness of those hours before dawn. He relished them especially in times of snow or rain or storm, which gave him a deeper sense of isolation. In cold weather, he built up his fire and prepared coffee or strong black tea. He worked, prayed, studied, and especially he allowed himself to be saturated by an awareness of the reality of each moment, listening always for what it had to tell him.

" 'Think of it,' he wrote one rainy night, 'all that speech pouring down, selling nothing, judging nobody . . . What a thing it is to sit absolutely alone, in the forest, at night, cherished by this wonderful, unintelligible, perfectly innocent speech, the most comforting speech in the world, the talk that rain makes by itself all over the ridges . . . Nobody started it, nobody is going to stop it. It will talk as long as it wants, this rain. As long as it talks I am going to listen.' "

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vantage, to be healthier and stronger than we have been, to learn more than we did, to make fewer mistakes, to have better characters, to see more of the world, to be able to live fuller and richer lives, to have more power and beauty and joy. How can they in this day acquire the necessary training and education for this, how can they come into contact and association with many people and many beautiful and stimulating things and scenes if we, their parents, cramp our lives and theirs by resorting to simplicity? Do not even their bodies require a great variety of foods in order to be healthy? How is the mind to grow unless it is fed unceasingly from a wide variety of sources? Surely beauty is a most important element in the life of both individuals and communities, and how can we have beauty if we are limited by a drab, severe and monotonous simplicity of form, line, color, material, texture and tone?

Again, many people who doubt the validity of simplicity would say that if it were put into effect it would extend itself beyond the lives of individuals and claim application to group affairs. They would then naturally say, if many people "go simple," who is going to carry on the necessary complex work of the world? Governments, industries, and institutions have to be carried on and they are highly complex. Are these people who so greatly desire simplicity going to dodge their share in the complex tasks of society? In most organizations power is exercised over people. Is it right for some people to try to escape wielding that power? Who is to wield such power wisely if not those with a conscience? Is it not the duty of sensitive people to grasp power and direct its use as well as possible? Is this cry for simplicity only a camouflage for irresponsibility, for lack of courage or failure of energy?

These questions suggest that in this idea of simplicity there may be a danger to our community life. The existence of a large nation or a large city is nowadays inherently complex. To insist on simplicity and really put it into effect would seem to mean eventually destroying large organizations, and that means our present mode of community and national life.

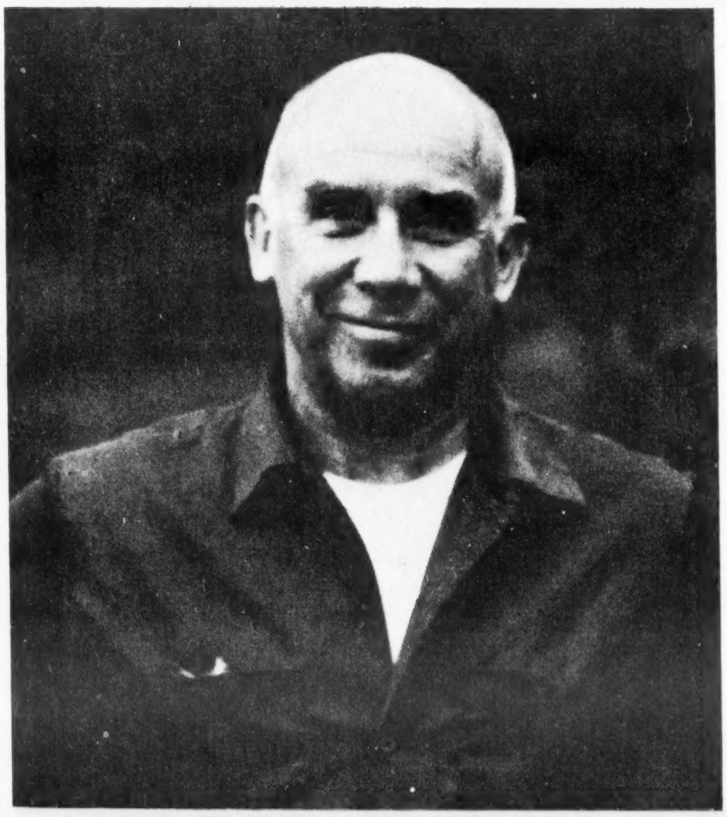
Let us consider the first major doubt, to the effect that modern science and inventions have made possible a boundless supply of goods and foods of all sorts, so that the ages of scarcity and all the assumptions, thinking and morality based thereon are outmoded, including the idea of there being any value in simplicity.

Although, from an engineering point of view, technology has made it easily possible to supply all of mankind's material needs, this possibility is far from being an actuality. There is a very big *"if"* attached. Despite the wondrous mechanical, chemical and electrical inventions, scarcity of necessities still exists to a painful degree in every country. There are large portions of the population of the United States who do not have such comforts as water piped into the house or apartment, and furnaces to provide house warmth in winter. Yet this country is one of the wealthiest and most widely mechanized. Another failure in application of technology is shown by the vast numbers of unemployed in almost all countries – probably more than ever before in the history of the world.

Our financial price system and debt structure controls production, distribution and the wherewithal to pay for consumption. That system operates to cause wheat to be burned in the United States while millions are starving in China: tons of oranges to be left to rot in California while children in our city slums are subject to rickets, bad teeth and other forms of ill health for the lack of vitamins in those oranges; and so on for a long chapter.

The great advances in science and technology have not solved the moral problems of civilization. Those advances have altered the form of some of those problems, greatly increased others, dramatized some, and made others much more difficult of solution. The just distribution of material things is not merely a problem of technique or of organization. It is primarily a moral problem.

In volume III of Arnold J. Toynbee's **Study of History**[1] he discusses the growth of civilizations. For some sixty pages he considers what constitutes the growth of civilization, including in that term growth in wisdom as well as in stature. With immense learning he traces the developments of many civilizations, – Egyptian, Sumeric, Minoan, Hellenic, Syriac, Indic, Iranian, Chinese, Babylonic, Mayan, Japanese, etc. After spreading out the evidence, he comes to the conclusion that real growth of a civilization does not consist of increasing command over the physical environment, nor of increasing command over the human environment (i.e., over the nations or civilizations), but that it lies in what he calls "etherealization"; a development of intangible relationships. He points out that this process involves both a simplification of the apparatus of life and also a transfer of interest and energy from material things to a higher sphere. He follows Bergson in equating complexity with Matter and simplicity with Life.[2]



Thomas Merton by Philip Stark

To those who say that machinery and the apparatus of living are merely instruments and devices which are without moral nature in themselves, but which can be used for either good or evil, I would point out that we are all influenced by the tools and means which we use. Again and again in the lives of individuals and of nations we see that when certain means are used vigorously, thoroughly and for a long time, those means assume the character and influence of an end in themselves.[3] We become obsessed by our tools. The strong quantitative elements in science, machinery and money, and in their products, tend to make the thinking and life of those who use them mechanistic and divided. The relationships which science, machinery and money create give us more energy outwardly but they live upon and take away from us our inner energy.[4]

We think that our machinery and technology will save us time and give us more leisure, but really they make life more crowded and hurried.[5] When I install in my house a telephone, I think it will save me all the time and energy of going to market every day, and much going about for making petty inquiries and minor errands to those with whom I have dealings. True, I do use it for those purposes but I also immediately expand the circle of my frequent contacts, and that anticipated leisure time rapidly is filled by telephone calls to me or with engagements I make by the use of it. The motor car has the same effect upon our domestic life. We are all covering much bigger territory than formerly, but the expected access of leisure is conspicuous by its absence. Indeed, where the motor cars are very numerous, you can now, at many times during the day, walk faster than you can go in a taxi or bus.

The mechanized countries are not the countries noted for their leisure. Any traveller to the Orient can testify that the tempo of life there is far more leisurely than it is in the industrialized West. To a lesser degree, the place to find relative leisure in the United States is not in the highly mechanized cities, but in the country.

Moreover, we continually overlook the fact that our obsession with machinery spoils our inner poise and sense of values, without which the time spared from necessitous toil ceases to be leisure and becomes time without meaning, or with sinister meaning – time to be "killed" by movies, radio or watching baseball games, or unemployment with its degradation of morale and personality.

Those who think that complexities of transportation, communication and finance have relieved the world from underfeeding and famine are mistaken. Probably their error comes from the fact that they belong to the comfortable and well-to-do groups among the powerful of the world. They have not understood, if indeed they have read, the statistics and reports of social and relief workers in regard to the extent of undernourishment in their own populations and in the rest of the world.

Those who shudder at the appalling loss of life by the Black Death in mediaeval Europe, forget the tens of millions killed by influenza during the World War. Those who point with pride at the statistics of the lowering incidence of contagious diseases often fail to mention the rising amount of degenerative organic diseases such as cancer, diabetes, kidney, heart and circulatory failures, and of insanity. So distinguished a physiologist as Alexis Carrel in his book, **Man the Unknown**, has given evidence sufficient to startle and humble our pride in respect to the alleged "conquest of disease."[6] He states that merely increasing the age to which people live tends to add to the number of aged people whom the young must support, and does not necessarily spell progress. He even believes that our modern techniques for comfort are doing our peoples grave biological harm by atrophying our adaptive mechanisms, to say nothing of the social evils created by industrialism.[7]

No – the way to master the increasing complexity of life is not through more complexity. The way is to turn inward to that which unifies all – not the intellect but the spirit, and then to devise and put into operation new forms and modes of economic and social life that will truly and vigorously express that spirit. As an aid to that and as a corrective to our feverish over-mechanization, simplicity is not outmoded but greatly needed.

There is a doubt whether simplicity is compatible with large organizations of any kind, so that insistence upon simplicity in that field would result in the destruction of large organizations upon which so much of our modern life depends. Correlated with this is a doubt whether the avoidance of exercising power over others, as part of an effort to attain simplicity, is not really a dodging of responsibility. As to these my belief is that our present world has too many occasions and opportunities for the exercise of power over other people. Our great executive organizations – financial, manufacturing, commercial, and governmental – are so large that it is impossible for their chief executive officers to know the full truth about what is happening to the people in them. Indeed, there is sure to be great and constant misunderstanding, injustice and consequent resentment and friction. That is true of all large executive organizations, no matter what their field of action. The larger they are the more certainly does this condition exist. Their very size makes them humanly inefficient, whether or not they are mechanically or financially efficient.

Hence we are unable to wield vast powers without probably doing more harm than good. There is too much concentration of power in the hands of too few people. I agree with Mr. Justice Brandeis that our organizations are too large for human efficiency. To say that only by the concentration of wealth can we attain great technical advances is not a valid argument, for already our technical development is out of proportion with the rest of our growth. If we want our civilization to last we must prevent megalomania and keep the different departments of our common life in harmony.[8] We need to decentralize our economic, social and political life. If larger aggregations are desirable for some purposes, it should be possible to integrate the small units more loosely than at present, and for different functions. Such changes would give society greater security, not less. In view of the foregoing ideas and some others I doubt whether complete socialism is an effective answer.

HAVING DISCUSSED some of the major doubts, let us turn to the reasons for simplicity. There are a number of reasons for voluntary simplicity of living, but perhaps not so many as to make the discussion of simplicity itself complex. If it seems complex, it is because so much intellectual clutter and underbrush has to be removed in order to see clearly. Since our thinking runs predominantly to economics, suppose we consider first the economic aspects.

Economics has at least three divisions: production, distribution and consumption. Of material goods we are not all producers or distributors, but we are all consumers. Simplicity of living affects primarily consumption. It sets a standard of consumption. Consumption is the area within which each individual can affect the economic life of the community. Small as his own share may be, that is the area within which every person can exercise his control over the forces of economic production and distribution. If he regards himself as responsible for our joint economic welfare he has a duty to think out and decide upon and adhere to a standard of consumption for himself and his family.

The economic system in which we find ourselves is gravely defective in operation. Greed and competition are two of its harmful elements. Competitive ostentation – "keeping up with the Joneses" – is a prominent feature of modern social life.[9] Simplicity of living acts as a deterrent to such ostentation and hence to both greed and competition. Therefore, all those who desire to reform the existing economic system can take an effective part by living simply and urging and encouraging others to do likewise. This thing comes close to all of us. Capitalism is no mere exterior organization of bankers and industrialists. It consists of a spirit and attitude and habitual actions in and among all of us. Even those who desire to reform or end it usually have within themselves certain of its attitudes and habits of mind and desire. If capitalism is to be reformed or ended, that change will alter the lives and thoughts and feelings of every one of us. Conversely, if I wish actively to participate in this transformation, I myself must begin to alter my own life in the desired direction. If I share too heavily in the regime I want to change, it becomes too difficult for me to disentangle myself, and I cease to become effective as a reformer. Those who live on income from investments will not dare to advocate deep economic changes, unless they live simply enough to permit a lowering of their income without too great an upset in their mode of life. My changes must be both inner and outer and must, I believe, be in the direction of more simplicity.

Exploitation of human beings is an ancient evil, older than capitalism. It existed under European feudalism, and probably in most of the older forms of economic and social organization in every continent. It goes on today all around us, and practically everyone of us shares in it at least indirectly. The first step I can take to cut down my share in exploitation is to live simply. All luxuries require unnecessary labour, as John Woolman so clearly showed.[10] The production and consumption of luxuries divert labor and capital from tasks which are socially more productive and beneficial; they often take land away from wise use; and they waste raw materials which might be used to better advantage. This tends to increase the prices of necessities and thereby lowers real wages and makes the struggle of the poor harder. Since poor people imitate the rich, we see girls on small wages buying furs, expensive shoes and cosmetics, and depriving themselves of proper food and warm clothing in order to do so. In such a case the ostentatious luxury of the rich clearly is a factor in causing hardships and sickness, and resulting in unnecessary labor on the part of the poor, to repair those losses. The fashions in luxuries often change arbitrarily and suddenly, and such changes create unemployment. Those who work at luxury trades are, in time of economic depression, in the most insecure position of all, because then the spending for luxuries is the first thing to stop. Therefore the fewer people there are engaged in luxury trades, the more secure the population will be.

Simplicities must not infringe upon the minimal needs of individuals, or upon even the wise surplus margins above those minima. But inasmuch as the desires of mankind are boundless, and we all tend to rationalize our desires, there is endless dispute as to how wide the surplus margin should be in order to be wise. A recent study by Professor E. L. Thorndike, of Columbia University, indicates that the actual American expenditures for food, clothing and housing are considerably larger than the actual necessities to sustain life.[11] He took from the United States census and similar reliable sources the total classified expenditure of the people of the United States. According to the press report, he said, "By the aid of a consensus of psychologists, I have divided each item of our peoples' expenses among the wants to which it probably ministers, and then combined the results into a list of wants and the amounts paid for the satisfaction thereof. . . . The payments for sensory pleasures, security, approval of others, and the pleasures of companionship and sociability, including romance and courtship, are in each case close in magnitude to the amount paid for freedom from hunger. . . . We pay more for entertainment (including the intellectual pleasures and the sensory pleasures of sight, sound, taste and smell) than for protection against cold, heat, wet, animals, disease, criminals and other bad people, and pains." The approval of others, self-approval, pleasure of vision, courtship, and other elements are strong causes of expenditure for clothes.

In view of all this, it is clear that in our expenditures of money, while elemental necessities must be met, nevertheless there is above that line a wide realm for the application of the principle of simplicity.

A guiding principle for the limitation of property was suggested by Ruskin: "Possession is in use only, which for each man is sternly limited; so that such things and so much of them as he can use, are indeed, well for him, or Wealth; and more of them, or any other things, are ill for him, or Illth."[12]

We are told that there is a close relationship between economic and political factors in society. It is interesting that three moderns with immense political influence, Lenin, Gandhi, and Kagawa, have led lives of extreme simplicity. Their simplicity has been a factor in their political power. Political power is based on the trust of the masses in the leader. By a life of great simplicity over a long period of time the leader demonstrates his unselfishness and sincerity – two elements which tend to generate and maintain trust. The masses feel that such a leader will not "sell them out." By sharing to that extent in the circumstances of the great majority of people the leader keeps aware of their problems and keeps *en rapport* with them. By so acting he identifies them with himself, as well as himself with them, thus encouraging them to feel that they too, despite small material means, may become significant in the life of the community or nation. In spirit they feel closer to him and feel themselves enabled to share in his greatness, and thus their self-respect, their courage, their endurance and morale are enhanced. If an entire ruling group or intelligentsia were always to live simply, the moral unity, self-respect and endurance of the entire nation would be enhanced. If anyone wishes strong and enduring political power for a great cause, he will be wise to simplify his life greatly.

Havelock Ellis[13] states that St. Francis espoused poverty and simplicity in order to secure unrestricted contact with nature and with men. "The free play of the individual soul in contact with nature and men, Francis instinctively felt, is joy and liberation." "It is in the simpler and elementary things that our life consists." Such unity with nature and men is something which our industrialized modern society is sorely lacking and which its individual members greatly crave, as indicated by the zest and release which they get from an occasional holiday in the country or at the seashore. Lack of unity between men is now widely prevalent.

To give a concrete instance of what I mean by unity and disunity, it would be consistent with a real aware-

Photo by Thomas Merton of the Venerable Nyanaponika, "The hermit of the forest," visiting with a younger hermit before one of the hermitages of the region, Kandy, Ceylon.

ness of human unity if I should invite into my house for a meal and a night's lodging a starving man who has knocked at my door. But if my rugs are so fine that I am afraid his dirty shoes may ruin them, I hesitate. If I have many valuable objects of art or much fine silverware, I also hesitate for fear he may pocket some of them or tell men who may later steal them from the house. If my furniture and hangings bespeak great wealth I mistrust him lest he hold me up; or perhaps if I am less suspicious and more courageous and more sensitively imaginative, I fear lest the contrast between his poverty and my abundance will make him secretly envious, or resentful, or bitter, or make him feel ill at ease. Or perhaps he is so very dirty that I fear he has vermin and I am revolted by that thought and am so far from him humanly that I do not know how to deal with him humanely. In this case it is clear that my lack of simplicity acts as a barrier between him and me. The prolonged lack of simplicity of our whole society has increased the distance between his thoughts, feelings and ways, and mine, and so adds to the social barrier.

Or again, if I have much real and personal property and am interested in it, my time is very largely occupied in looking after it. I will not have much time for simple neighborliness. A selfish and aggressive neighbor may infringe on my boundaries so as to use some of my land next to his own. He would not have been so likely to do that if I had previously been truly friendly with him, had shared some of my garden produce with him and his family and had been kind to his children. So my failure to do the things which would have created good feeling and a sense of human unity in him has resulted in trouble between us. The lack of simplicity in my own life has engrossed too much of my time and energy and has been an effective cause in creating disunity.

Moreover, if, as some people believe, we are at the beginning of a period of economic decline, it may well be that great simplicity of living is the main condition upon which the learned professions which require leisure will be permitted to exist. If so, the previous voluntary adoption of greater simplicity by the learned professions would count for their security and make the transition easier for them. Something of that is recognized in the age-old Hindu society in which the Brahmans – the teachers, physicians, priests and other learned professions – are morally bound to and predominantly actually do maintain lives of extreme simplicity as an essential element in their professional code, to which great respect is accorded.

For those who believe in non-violence, simplicity is essential. Many possessions involve violence in the form of police protection and law suits. The concentration of much property in one person's possession creates resentment and envy or a sense of inferiority among others who do not have it. Such feelings, after they have accumulated long enough, become the motives which some day find release in acts of mob violence. Hence, the possession of much property becomes inconsistent with principles of non-violence. Simplicity helps to prevent violence. Again, the non-violent person may some day become a conscientious objector and subject to punishment by governments – possibly jail sentence. If he has habitually practiced simplicity he will not have so much to lose that it would weaken his stand nor will he be too fearful of jail life. Also, unless he has habitually practiced simple living there will be in the minds of others a slight doubt as to the completeness of his sincerity and unselfishness. That doubt will hamper the persuasiveness of his gentle resistance and voluntary suffering when the time comes for non-violent resistance.

The greatest gulf in society is between the rich and the poor. The practice of simplicity by the well-to-do helps to bridge this gulf and may be therefore an expression of love. The rich young man was advised by Jesus to sell all his goods and give to the poor and thus simplify his life, in order to perfect his religious life. No doubt such an act would have resulted in more than simplification of the young man's life, but that would have been one of the results.

Hinduism and Buddhism have also emphasized the value of simplicity. The anonymous author of **The Practice of Christianity**[14] believes that tender-heartedness – gentle kindness – is the supreme virtue and the essence of Jesus' teachings. Tenderheartedness, together with great intelligence and strength of character, has in the cases of such leaders as Buddha, Jesus, St. Francis, George Fox, John Woolman and Gandhi, resulted in simplicity. Tender-heartedness seems to have been one of the elements which compelled those men to recognize human unity and to live in accordance with it and to share their property and lives with those who had need. Thus simplicity is, perhaps, a part of utter gentleness, and may be essential to those who would really practice religion.

It is often said that possessions are important because they enable the possessors thereby to enrich and enhance their personalities and characters. The claim is that by means of ownership the powers of self-direction and self-control inherent in personality become real. Property, they say, gives stability, security, independence, a real place in the larger life of the community, a feeling of responsibility, all of which are elements of vigorous personality.[15]

Nevertheless, the greatest characters, those who have influenced the largest numbers of people for the longest time have been people with extremely few possessions. The reason for this is something that we usually fail to realize, namely that the essence of personality does not lie in its isolated individuality, its separateness from other people, its uniqueness, but in its basis of relationships with other personalities. It is a capacity for friendship, for fellowship, for intercourse, for entering imaginatively into the lives of others. At its height it is a capacity for and exercise of love.[16] Friendship and love do not require ownership of property for either their ordinary or their finest expression. Creativeness does not depend on posession. Intangible relationships are more important to the individual and to society than property is. It is true that a certain kind of pleasure and satisfaction come from acquiring mastery over material things, but that sort of power and that sort of satisfaction are not so secure, so permanent, so deep, so characteristic of mental and moral maturity as are some others. The most permanent, most secure and most satisfying sort of possession of things other than the materials needed for bodily life, lies not in physical control and power of exclusion but in intellectual, emotional and spiritual understanding and appreciation. This is especially clear in regard to beauty.

We cannot have deep and enduring satisfaction, happiness or joy unless we have self-respect. There is good reason to believe that self-respect is the basis for all higher morality.[17] We cannot have self-respect unless our lives are an earnest attempt to express the finest and most enduring values which we are able to appreciate. Therefore simplicity is an important condition for permanent satisfaction with life. And inasmuch as national self-respect is a necessary condition for the maintenance of a nation or a civilization[18] it would seem that widespread simplicity as a cultural habit of an entire nation, would in the long run be essential for its civilization to endure. At any rate, in the two civilizations which have endured the longest, the Chinese and the East Indian, simplicity of living has been a marked characteristic. True, the simplicity of living of the Indian masses has been largely the enforced simplicity of poverty. Nevertheless, among the real intellectual and moral leaders of India, the Brahmans and social reformers like Gandhi, voluntary simplicity has been and still is a definite and widely observed element of their code and custom.

Those by whom simplicity is dreaded because it spells lack of comfort, may be reminded that some voluntary suffering or discomfort is an inherent and necessary part of all creation, so that to avoid all voluntary suffering means the end of creativeness.

There is one further value to simplicity. It may be regarded as a mode of psychological hygiene. Just as eating too much is harmful to the body, even though the quality of the food eaten is excellent, so it seems that there may be a limit to the number of things or the amount of property which a person may own and yet keep himself psychologically healthy. The possession of many things and of great wealth creates so many possible choices and decisions to be made every day that it becomes a nervous strain. One effect of this upon the will, and hence upon success in life, was deftly stated by Confucius:

"Here is a man whose desires are few. In some things he will not be able to maintain his resolution but they will be few.

"Here is a man whose desires are many. In some things he will be able to maintain his resolution but they will be few."

If a person lives among great possessions, they constitute an environment which influences him. His sensitiveness to certain important human relations is apt to become clogged and dulled, his imagination in regard to the subtle but important elements of personal relationship or in regard to lives in circumstances less fortunate than his own is apt to become less active and less keen. This is not always the result, but the exception is rare. When enlarged to inter-group relationships this tends to create social misunderstandings and friction.

The athlete, in order to win his contest, strips off the non-essentials of clothing, is careful of what he eats, simplifies his life in a number of ways. Great achievements of the mind, of the imagination, and of the will also require similar discriminations and disciplines.

Observance of simplicity is a recognition of the fact that everyone is greatly influenced by his surroundings and all their subtle implications. The power of environment modifies all living organisms. Therefore each person will be wise to select and create deliberately such an immediate environment of home things as will influence his character in the direction which he deems most important and such as will make it easier for him to live in the way that he believes wisest. Simplicity gives him a certain kind of freedom and clearness of vision.

The foregoing discussion has answered, I think, much of the second strong doubt which we mentioned near the beginning, the doubt that parents have as to the harm that simplicity might do to the minds and general cultural development of their children. In

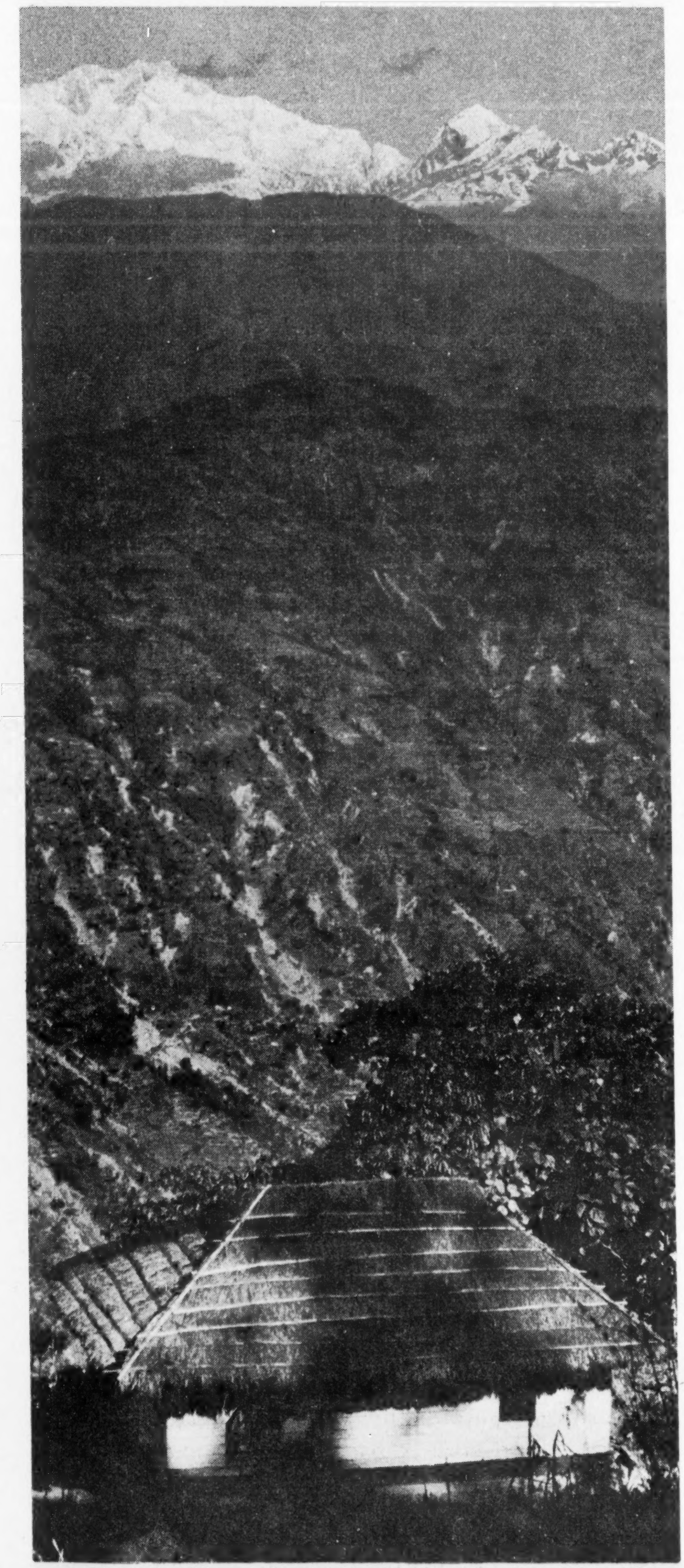


Photo by Merton in Asia in 1968 at the time of his visit with the Dalai Lama

regard to aesthetics, simplicity should not connote ugliness. The most beautiful and restful room I ever entered was in a Japanese country inn, without any furniture or pictures or applied ornaments. Its beauty lay in its wonderful proportions and the soft colors of unpainted wood beams, paper walls and straw matting. There can be beauty in complexity but complexity is not the essence of beauty. Harmony of line, proportion and color are much more important. In a sense, simplicity is an important element in all great art, for it means the removal of all details that are irrelevant to a given purpose. It is one of the arts within the great art of life. And perhaps the mind can be guided best if its activities are always kept organically related to the most important purposes in life.

If simplicity of living is a valid principle there is one important precaution and condition of its application. I can explain it best by something which Mahatma Gandhi said to me. We were talking about simple living and I said that it was easy for me to give up most things but that I had a greedy mind and wanted to keep my many books. He said, "Then don't give them up. As long as you derive inner help and comfort from anything, you should keep it. If you were to give it up in a mood of self-sacrifice or out of a stern sense of duty, you would continue to want it back, and that unsatisfied want would make trouble for you. Only give up a thing when you want some other condition so much that the thing no longer has any attraction for you, or when it seems to interfere with that which is more greatly desired." It is interesting to note that this advice agrees with modern Western psychology of wishes and suppressed desires. This also substantiates what we said near the beginning of our discussion, that the application of the principle of simplicity is for each person or each family to work out sincerely for themselves. ■

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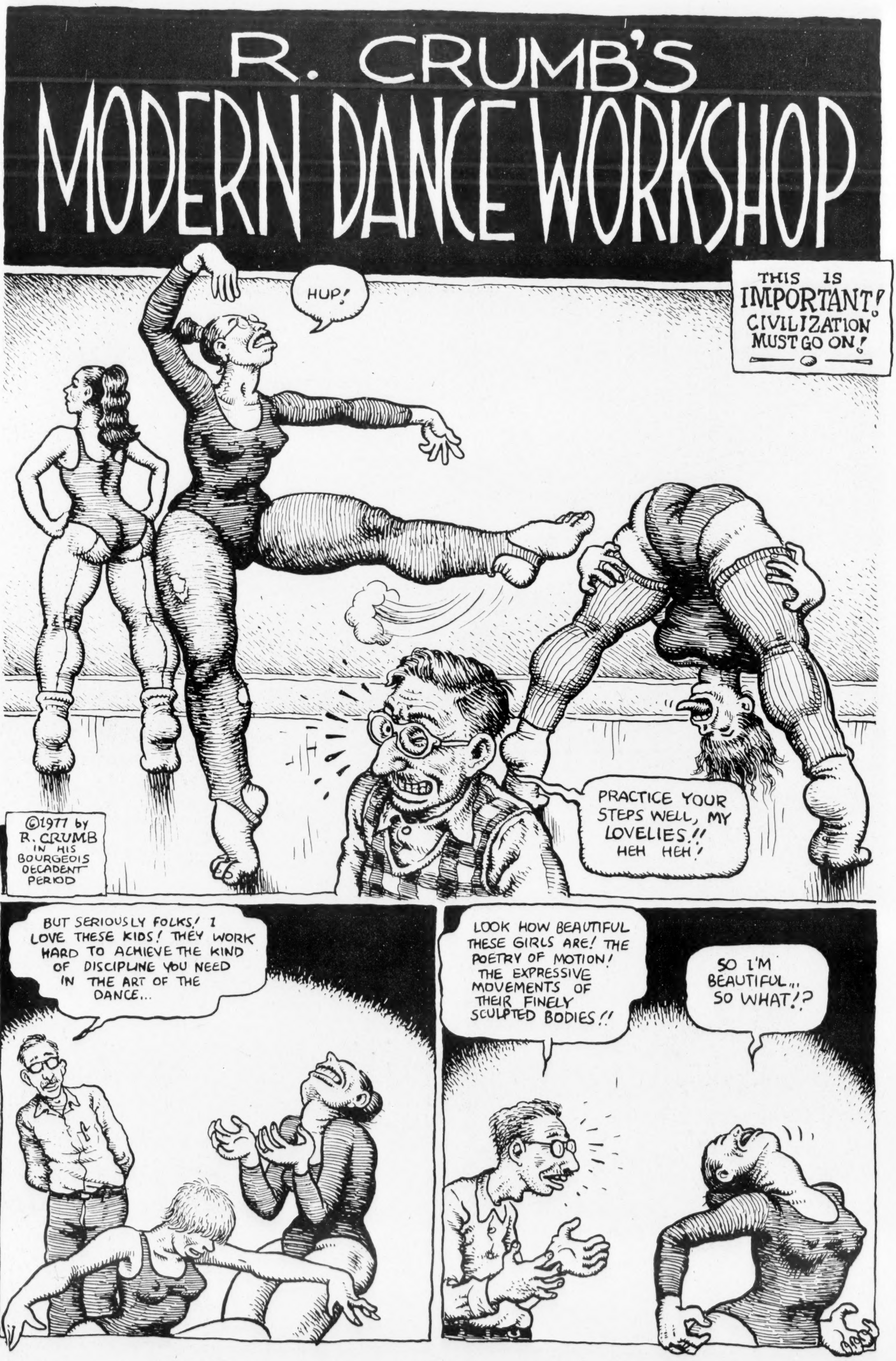
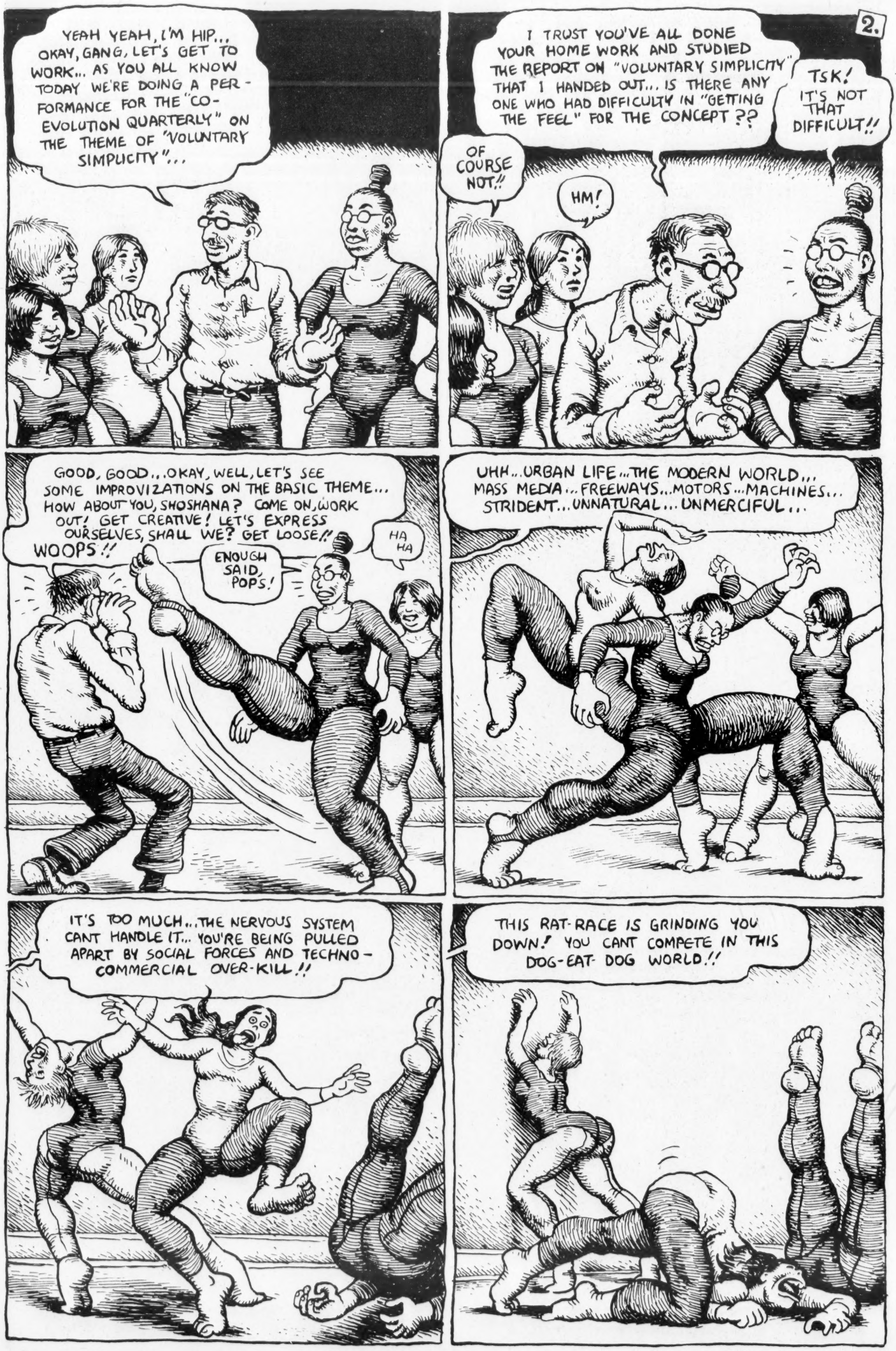
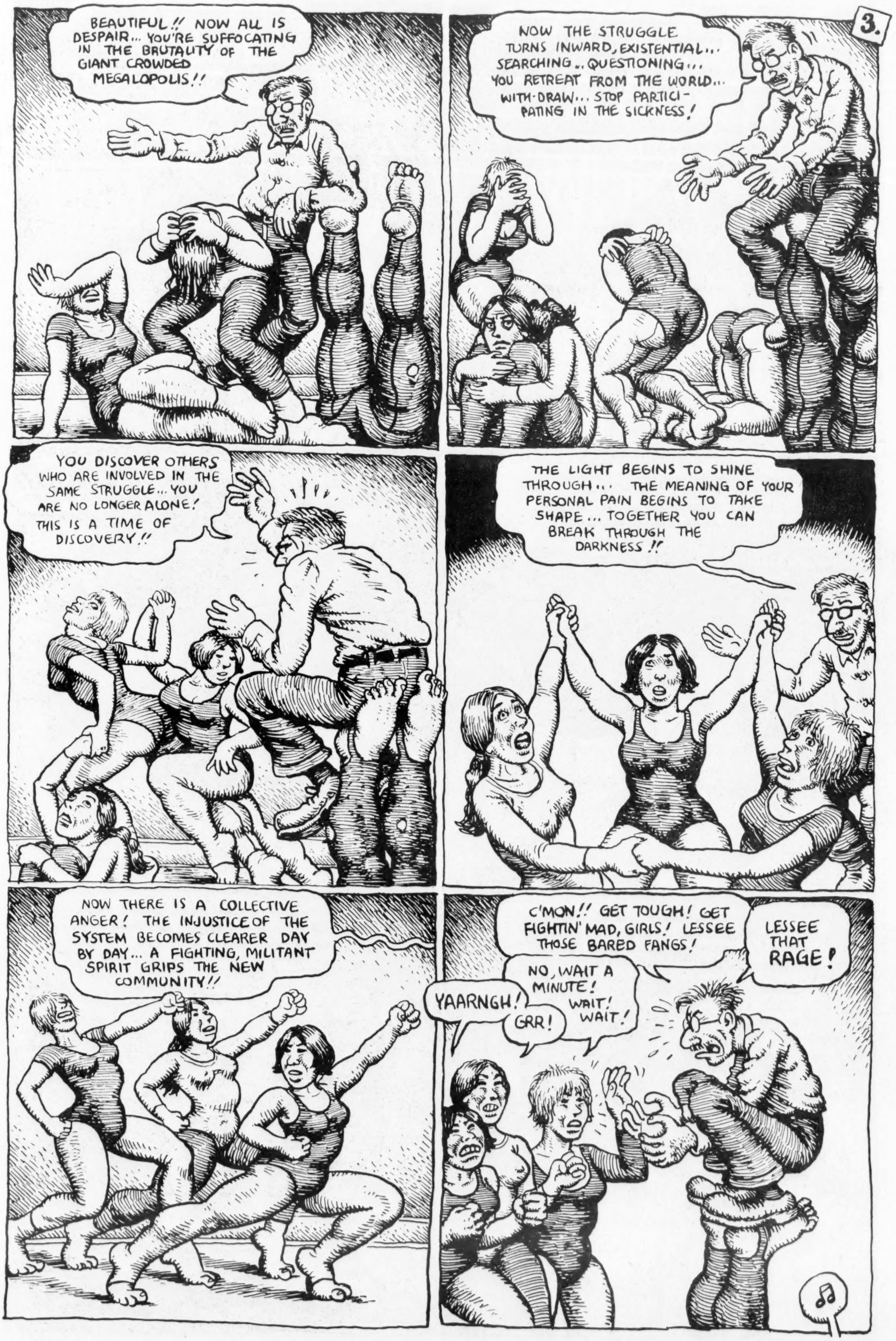
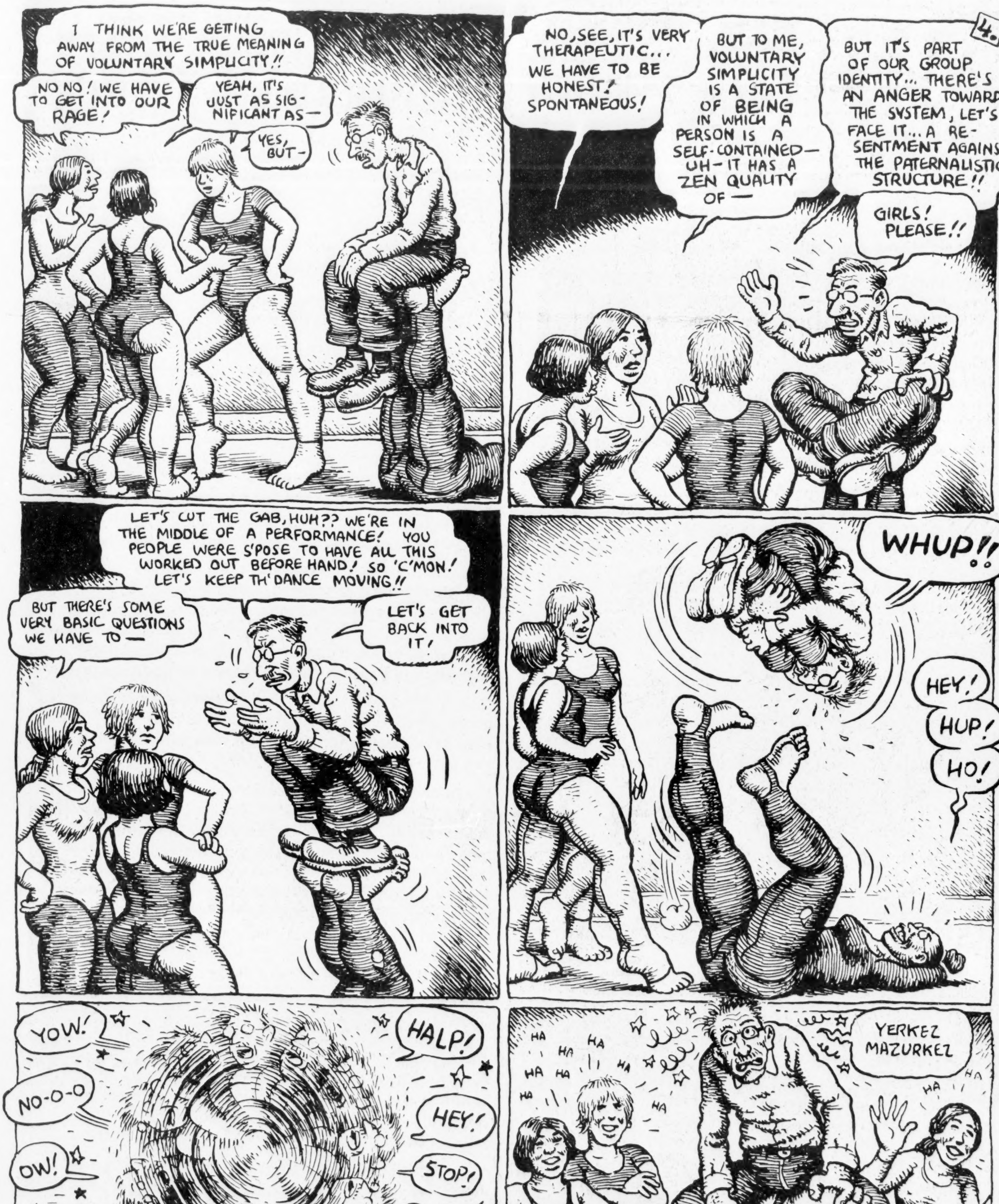

R. CRUMB'S
MODERN DANCE WORKSHOP
HUP!
THIS IS IMPORTANT! CIVILIZATION MUST GO ON!
PRACTICE YOUR STEPS WELL, MY LOVELIES!! HEH HEH!
©1977 by R. CRUMB IN HIS BOURGEOIS DECADENT PERIOD
BUT SERIOUSLY FOLKS! I LOVE THESE KIDS! THEY WORK HARD TO ACHIEVE THE KIND OF DISCIPLINE YOU NEED IN THE ART OF THE DANCE...
LOOK HOW BEAUTIFUL THESE GIRLS ARE! THE POETRY OF MOTION! THE EXPRESSIVE MOVEMENTS OF THEIR FINELY SCULPTED BODIES!!
SO I'M BEAUTIFUL... SO WHAT!?


2.
YEAH YEAH, I'M HIP... OKAY, GANG, LET'S GET TO WORK... AS YOU ALL KNOW TODAY WE'RE DOING A PERFORMANCE FOR THE "CO-EVOLUTION QUARTERLY" ON THE THEME OF "VOLUNTARY SIMPLICITY"...
I TRUST YOU'VE ALL DONE YOUR HOME WORK AND STUDIED THE REPORT ON "VOLUNTARY SIMPLICITY" THAT I HANDED OUT... IS THERE ANY ONE WHO HAD DIFFICULTY IN "GETTING THE FEEL" FOR THE CONCEPT ??
TSK! IT'S NOT THAT DIFFICULT!!
OF COURSE NOT!!
HM!
GOOD, GOOD... OKAY, WELL, LET'S SEE SOME IMPROVIZATIONS ON THE BASIC THEME... HOW ABOUT YOU, SHOSHANA? COME ON, WORK OUT! GET CREATIVE! LET'S EXPRESS OURSELVES, SHALL WE? GET LOOSE!!
WOOPS!!
ENOUGH SAID, POPS!
HA HA
UHH... URBAN LIFE... THE MODERN WORLD... MASS MEDIA... FREEWAYS... MOTORS... MACHINES... STRIDENT... UNNATURAL... UNMERCIFUL...
IT'S TOO MUCH... THE NERVOUS SYSTEM CANT HANDLE IT... YOU'RE BEING PULLED APART BY SOCIAL FORCES AND TECHNO-COMMERCIAL OVER-KILL!!
THIS RAT-RACE IS GRINDING YOU DOWN! YOU CANT COMPETE IN THIS DOG-EAT-DOG WORLD!!


3.
BEAUTIFUL!! NOW ALL IS DESPAIR... YOU'RE SUFFOCATING IN THE BRUTALITY OF THE GIANT CROWDED MEGALOPOLIS!!
NOW THE STRUGGLE TURNS INWARD, EXISTENTIAL... SEARCHING.. QUESTIONING... YOU RETREAT FROM THE WORLD... WITH-DRAW... STOP PARTICIPATING IN THE SICKNESS!
YOU DISCOVER OTHERS WHO ARE INVOLVED IN THE SAME STRUGGLE... YOU ARE NO LONGER ALONE! THIS IS A TIME OF DISCOVERY!!
THE LIGHT BEGINS TO SHINE THROUGH... THE MEANING OF YOUR PERSONAL PAIN BEGINS TO TAKE SHAPE... TOGETHER YOU CAN BREAK THROUGH THE DARKNESS!!
NOW THERE IS A COLLECTIVE ANGER! THE INJUSTICE OF THE SYSTEM BECOMES CLEARER DAY BY DAY... A FIGHTING, MILITANT SPIRIT GRIPS THE NEW COMMUNITY!!
C'MON!! GET TOUGH! GET FIGHTIN' MAD, GIRLS! LESSEE THOSE BARED FANGS!
LESSEE THAT RAGE!
NO, WAIT A MINUTE! WAIT! WAIT!
YAARNGH!
GRR!
♫


4.
I THINK WE'RE GETTING AWAY FROM THE TRUE MEANING OF VOLUNTARY SIMPLICITY!!
NO NO! WE HAVE TO GET INTO OUR RAGE!
YEAH, IT'S JUST AS SIGNIFICANT AS—
YES, BUT-
NO, SEE, IT'S VERY THERAPEUTIC... WE HAVE TO BE HONEST! SPONTANEOUS!
BUT TO ME, VOLUNTARY SIMPLICITY IS A STATE OF BEING IN WHICH A PERSON IS A SELF-CONTAINED— UH- IT HAS A ZEN QUALITY OF—
BUT IT'S PART OF OUR GROUP IDENTITY... THERE'S AN ANGER TOWARDS THE SYSTEM, LET'S FACE IT... A RESENTMENT AGAINST THE PATERNALISTIC STRUCTURE!!
GIRLS! PLEASE!!
LET'S CUT THE GAB, HUH?? WE'RE IN THE MIDDLE OF A PERFORMANCE! YOU PEOPLE WERE S'POSE TO HAVE ALL THIS WORKED OUT BEFORE HAND! SO 'C'MON! LET'S KEEP TH' DANCE MOVING!!
BUT THERE'S SOME VERY BASIC QUESTIONS WE HAVE TO—
LET'S GET BACK INTO IT!
WHUP!!
HEY!
HUP!
HO!
YOW!
HALP!
NO-O-O
HEY!
OW!
STOP!
BUZZZZZ
HA HA HA HA HA HA HA HA HA HA HA HA
YERKEZ MAZURKEZ
— END

SRI Is Wrong About Voluntary Simplicity

by Michael Phillips

SRI HAS MADE AN ERROR . . . of magnitude 100

I think that Elgin and Mitchell in their SRI report on Voluntary Simplicity have made a large mistake. They estimate that 5,000,000 Americans are now living by a set of principles they describe as "voluntary simplicity" and that a rapid trend is identifiable in that direction. Based on their definition of these principles and my own experiences living with the kind of people they're describing, I would put the number at 50,000 people who are involved in a NEW movement. SRI has only rediscovered some classical American traits, poured our Briarpatch philosophy on top of it, and called it a trend.

If there were 5,000,000 people living according to this new set of principles we should expect to see characters on TV with Johnny Appleseed traits and possibly there would be a "Marijuana Hour" like the old "Bell Telephone Hour."

This note to The CQ has two parts: first, what Elgin and Mitchell missed in their clustering of principles; and second, my thoughts on what has misled the SRI team.

WHAT THEY OMITTED

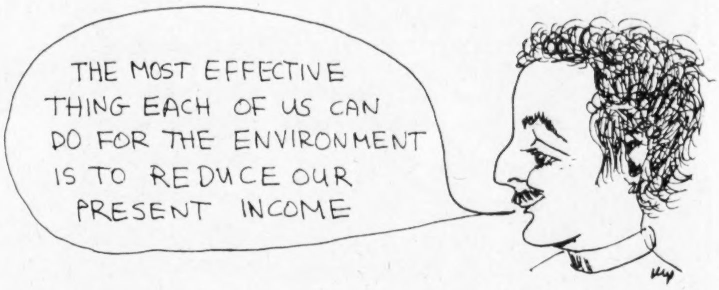
The principles of Voluntary Simplicity described by Elgin and Mitchell are precisely those of the Briarpatch and my friends; in their report they have described these values sympathetically and accurately. However, they missed the key underlying principle, the difference between fad and a true movement. The heart of the philosophy is: the rejection of "making a lot of money" as a personal goal. This movement is unique and new because all of its values converge on this issue; we offer our contribution to society by living in a way that shows others it is not necessary to "make a lot of money" to live joyfully. This sort of thing has been said before by religious ascetics, and idealists but it is a powerful new statement from a non-religious source within the present capitalist system.

It is also the central principle of the real voluntary simplicity movement. Several subsidiary issues are listed in the SRI report but they ignore the crucially important inter-relationship. The ecology cluster: conservation, open space, diversity, and respect for the natural. People centrally involved in the environmental-ecology movement have been saying for quite a while that each individual must reduce his/her real income in order to conserve resources. Maintaining present income with increased savings doesn't work because the money saved is just diverted to future consumption. Another suggestion has been to spend on services instead of goods. This proposal doesn't work either, because the person you pay for therapy, or gardening, can then use the money to buy a weekend home or for some other ecology endangering activity. The key ecological act that individuals can make is to reduce their income.

SRI also glosses over the principle of Sharing. This principle, so important to us, is likewise based on rejecting "making money." Sharing, as we understand it, is the opposite value, making it possible for more people to live on the same amount of money and resources; the result, of course, is a reduction of income per person. Sharing has many benefits, but its most practical is to allow people to live on less income.

Mike Phillips is a co-founder of The Briarpatch, author of The Seven Laws of Money, *and often a director of POINT Foundation.*

—SB


THE MOST EFFECTIVE THING EACH OF US CAN DO FOR THE ENVIRONMENT IS TO REDUCE OUR PRESENT INCOME

The right livelihood principles, essential to the real new movement, is again the opposite of "making a lot of money." Our movement is concerned with the inherent values of work, the direct rewards of working at the thing you want to do. It totally rejects the notion of working at something "to make money" so you can do something else that you enjoy on weekends. The work itself is the reward and the objective.

Clearly Americans believe that "making a lot of money" is good. Where is the broad base for voluntary simplicity? Almost no one wants to earn less next year than they earned this year.

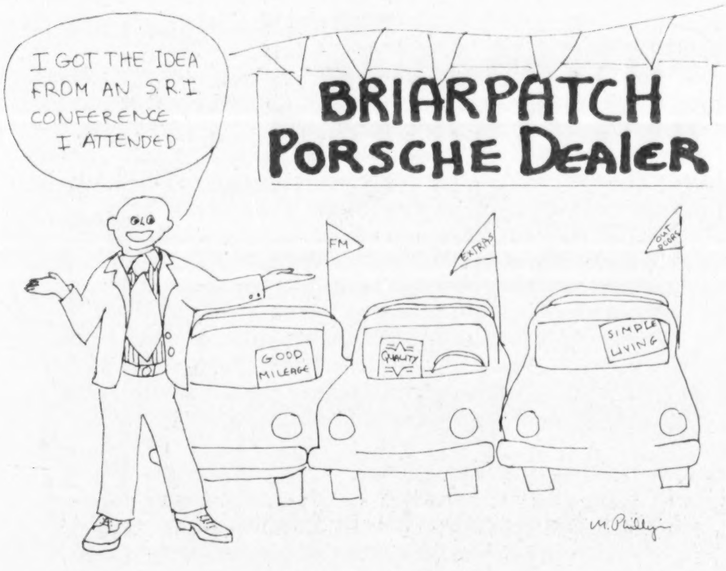
If a public opinion survey asked the question: "Would you like to make a lot of money?" you would not find 5,000,000 people saying "No," as SRI contends. Nor would you find many people saying that Johnny Appleseed is the ideal for their children; he was a wandering penniless vagrant, who spent his adult life staying as a guest at people's homes, telling stories, and planting seeds. Yet to me, and other people in the Briarpatch, to people who hold the cluster of values that SRI ascribes to "voluntary simplicity," Johnny Appleseed is indeed a personal hero whom we celebrate as an example for our children.

HOW THEY WERE MISLED

Where did Elgin and Mitchell go wrong in estimating 5,000,000 as the number of people living in Voluntary Simplicity? I think they combined some classical American values, the teachings of religious groups, the effects of inflation, and some fadish trends – into a big mistake.

America still believes in Jeffersonian values: frugality, sharing, conservation, independence and simple living and they are still with us in many invisible ways: *"Waste not want not," . . . "a penny saved is a penny earned."* The tenet of frugality is really deeply ingrained in America; it makes us very price conscious shoppers. How else do you explain the millions of housewives and others who watch TV for hours guessing the retail price of thousands of consumer goods, right down to the penny? The Price is Right!

The complication that SRI missed is that Americans are both frugal and gross consumers at the same time. The money most families save by being frugal, by going to garage sales and having the wife work at an extra job, is used to buy motorcycles, campers, and a weekend home in the woods. The frugality doesn't end up as a voluntary simplicity or ecological watchfulness. Money is saved to spend.


I GOT THE IDEA FROM AN S.R.I CONFERENCE I ATTENDED
BRIARPATCH PORSCHE DEALER
FM
EXTRAS
OUT DOORS
GOOD MILEAGE
QUALITY
SIMPLE LIVING
M. Phillips

"Make our money and . . . learn to live on less."

The idea that alot of people really want to live on less is another misconception of SRI. In fact, most people realize that their earning power will decline as they get older. It's not a new philosophical value, having to do with renouncing money or with not using resources. It is getting ready for reality — and you do it by squirrelling away your money now, and later living on less. If there is a trend it is just a trend toward early retirement.

Sharing. This great old value is still very strong in American life but not so visible in the general culture as it is among Blacks, tribal Indians, hobos, winos. It is also a lingering value in many rural areas. Sharing may be very prevalent among networks of friends in cities but since they don't live next door to each other their sharing isn't so socially visible. I think that though sharing is common these days, it is not a new or a growing value and can't be described as a trend toward simple living.

"Hi yo Silver . . . away." Conservation is a reappearing value lately and quite popular. The idea has been with us for a long time, as witnessed by the large number of National Parks dating from the last century. The love of the outdoors and of Nature that was so important in settling the continent, is now selling recreational vehicles, jeeps and snow mobiles; in these and other ways it is often the antithesis of ecology. The **Harper's Bazaar** photo is an incredible example of the outdoors being marketed as a chic fad.

Tombstone buildings. Almost every town large or small has an old I.O.O.F. hall. A monument to the old values of Independence, self-employment, and diversity. I.O.O.F. stands for International Order of Odd Fellows. Wacky individual idiosyncracy was the order of the day in the 1890's when I.O.O.F. was the largest fraternal order in our history. There is no mass organization that is the Odd Fellows equivalent in 1977.

Simple-living. I suspect that the SRI projection of 5,000,000 people living in voluntary simplicity must include the old line believers like Amish, Quakers, hobos, nuns and priests, bohemians, Gypsys and geniuses (like Bucky Fuller, Margo St. James, and Marcel Duchamp). These groups have always been with us and they are not showing noticeable growth. Even newly founded "voluntary simplicity" groups like the Peace Corp and Vista are not sharing the growth one would expect if you believed the SRI projection.

THE MISLEADING FACTOR

INFLATION is the main factor misleading Elgin and Mitchell. It is the motivation that is reviving certain old line values. The recent double digit inflation rate, with giant jumps in the price of gasoline, home heating oil, meat and coffee is the reason public opinion surveys find people "must cut way back," "forego meat one day a week," "wear old clothes," and favor "cheaper . . . multiple unit apartments." To call this voluntary simplicity is nonsense. Instead, people are cutting back because they can't afford not to.

A few trends in natural food and natural fibers, that have little to do with voluntary simplicity, may also be confusing the SRI researchers. I call this the "Esalen effect." The reasoning is like noticing the astounding increase in murders since 1965 and speculating that all the powerful emotions being unleashed are the result of Esalen Institute which started at the same time in 1965 to encourage people to express their emotions.

Food habits are drastically changing and clothing fibers are too, to some extent. Hippie foods have definitely made it big: granola, "natural-organic," kefir, and wine with meals, sprouts, herbal teas and lots more coming. But every culture has some area where frequent change occurs. We believe "you are what you eat," and we change our eating habits at astronomic (gastronomic?) rates. We have been willing to absorb the food of every immigrant group that has come here. Pizza, tacos, chop suey and blintzes have regularly changed American eating habits. But this doesn't extend to other cultural patterns. Nearly every young person "into food" knows about the Himalayan tribe whose people eat apricots and live to 100 years old. No one knows about their religion, judicial processes or any other cultural traits. We don't know because WE wouldn't consider changing those important patterns, though we'll try apricots.

[more →]

The Overall Suit

Here's the brightest way to dress for a barbecue on the beach, a picnic, any outdoor party. The jacket's a special plus when the evening gets cool. Overall, about $250; jacket, about $120. Both Pulitz-Her by Corinne Pulitzer, in green cotton poplin. The coral turtleneck, imported cotton and polyester, Aspen Skiwear, div. of Richton. About $11.

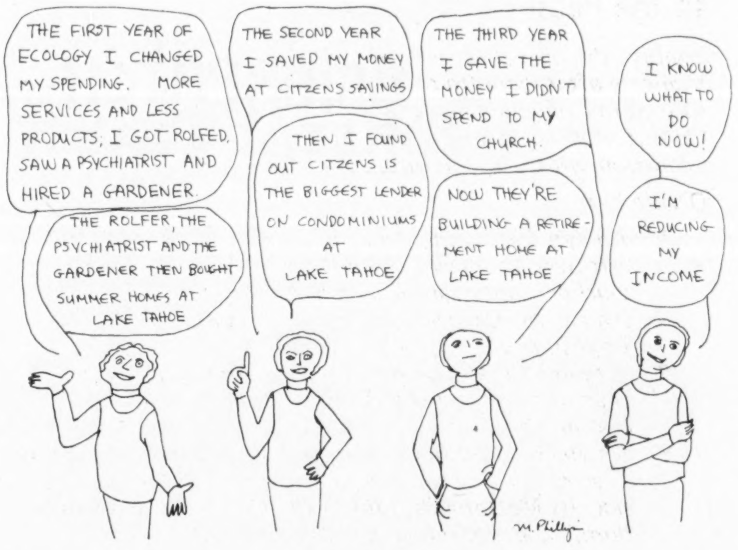
—Harper's Bazaar, 1977

Our eating habits change all the time. In the 1950's it was instant coffee and frozen dinners (at that time considered simpler living), twinkies, and Tab. Changing our food habits doesn't mean any substantial change in principles; it's just a socially prescribed way to feel we are changing ourselves.

The same problem arises when you point to "natural" fibers as evidence of a "natural" life. Five years ago the only cotton panties at Macy's were those with daisies or panda bears on them. Today they come in a variety of plain colors and many synthetic panties have cotton fabric in the crotches. But this trend is only the result of the information that synthetic panties encourage the growth of vaginal infections, and the word has rapidly spread. No value changes, just information; more along this line can be expected — synthetics have lots of problems. We have a fantastic Briarpatch store in the East Bay, the first to sell only cotton fabrics. Business is fine but in a market of 1 million people, they don't indicate much of a trend, since they have fewer customers than an ice cream store down the block.

AFTERTHOUGHTS

What SRI is pointing out to businessmen may be unwittingly useful, it may direct their attention to market segments that haven't had enough attention (Retirees, Quakers, Vegetarians, etc.) but the pervasive "principles" supposedly influencing their 5,000,000 population is wrong.


THE FIRST YEAR OF ECOLOGY I CHANGED MY SPENDING. MORE SERVICES AND LESS PRODUCTS; I GOT ROLFED, SAW A PSYCHIATRIST AND HIRED A GARDENER.
THE ROLFER, THE PSYCHIATRIST AND THE GARDENER THEN BOUGHT SUMMER HOMES AT LAKE TAHOE
THE SECOND YEAR I SAVED MY MONEY AT CITIZENS SAVINGS
THEN I FOUND OUT CITIZENS IS THE BIGGEST LENDER ON CONDOMINIUMS AT LAKE TAHOE
THE THIRD YEAR I GAVE THE MONEY I DIDN'T SPEND TO MY CHURCH.
NOW THEY'RE BUILDING A RETIREMENT HOME AT LAKE TAHOE
I KNOW WHAT TO DO NOW!
I'M REDUCING MY INCOME
M. Phillips

We should not delude ourselves into thinking that a large shift in values is going on in America. Changes in important values are occurring in small groups of people but the movement is slow and the number is small, probably in the tens of thousands. I personally think the growth of this real simple living movement will parallel the spread of Eastern spiritual practices in the U.S. ■

Flash! New Harris poll on VS

Washington Post, 23 May 1977

"The American people have begun to show a deep skepticism about the nation's capacity for unlimited economic growth, and they are wary of the benefits that growth is supposed to bring. Significant majorities place a higher priority on improving human and social relationships and the quality of American life than on raising the standard of living.

"The latest Harris survey shed some significant and sometimes startling light on current American thinking. By 79 to 17 percent the public would place greater emphasis on *teaching people how to live more with basic essentials* than on *reaching higher standards of living.* By 76 to 17 percent a sizeable majority opts for *learning to get our pleasure out of nonmaterial experiences* rather than *satisfying our need for more goods and services.* By 59 to 33 percent a majority would stress *putting a real effort into avoiding doing those things which cause pollution*, over *finding ways to clean up the environment as the economy expands.*

"A lopsided 82 to 11 percent would concentrate on *improving those modes of travel we already have.* Only 11 percent would emphasize *developing ways to get more places faster.* By 77 to 15 percent the public comes down for *spending more time getting to know each other better as human beings on a person to person basis* instead of *improving and speeding up our ability to communicate with each other through better technology.* By 63 to 29 percent a majority feels that the country would be better served if emphasis were put on *learning to appreciate human values more than material values* rather than *finding ways to create more jobs for producing more goods.* By 66 to 22 percent the public would choose *breaking up big things and getting back to more humanized living* over *developing bigger and more efficient ways of doing things.* By 64 to 26 percent most Americans feel that *finding more inner and personal rewards for the work people do* is more important than *increasing the productivity of our work force.*"

Researcher's note: I like this stuff, it makes me feel warm and wonderful but I don't think it refutes Mike Phillips. There's no way of knowing if this represents a change in what people say rather than do. I think they would have said the same thing in the 50's. I would say all this but I want a car, I want a stereo and TV, I want to travel a lot first class, I want to make more money. I am a bullshitter. I think a lot of these people are too.

—Anne Herbert

Living below your means

There are a few crass things that haven't been said yet about Voluntary Simplicity.

It's a cheap way to be rich. It's the only easy way to be rich.

If you don't want much and don't get much, you can nearly always get whatever you want.

We're talking about quality, the kind of quality that money would like to buy. Time to do your work well enough to be proud of it. Few enough things to have fine ones and take good care of them. Time for an occasional original idea and time to follow it. Time for family and "family."

And here's an odd corollary I discovered when invited by chance to a motley gathering of Adirondack guideboat builders in upper New York state. The guideboat is considered the Stradivarius of boatbuilding. The meeting was at palatial lakeside estate, into which the wood surgeons fit energetically. They were used to such surroundings, it turned out, because if you do something at all well the rich will court your company far more than they will someone who has merely money.

There's a couple of hazards in Voluntary Simplicity. One is arrogance. Another is success (artistic, commercial, personal) which leads to temptations which lead back again to Involuntary Complexity — too much going on to do anything right. The dumbest hazard is loafing, which is letting the whole point miss you.

—SB

The gods are those who either have money or do not want it.

—Samuel Butler

In the People's Republic

Simply, the best portrayal of today's (the 1970s) China. Vignette after vignette of daily routine — waking in the factory dorm, digging berms to water walnut trees, getting a haircut, flirting, taking a walk in Shanghai, watching an operation with acupuncture. . .

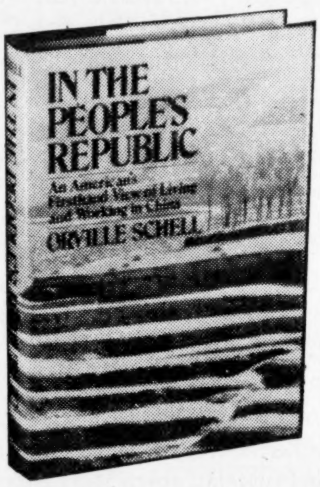
Orville has:

- *An eye for manners and social dress. He notes the left-over kow-tows, the colors of sneakers worn by workers, the peasant ease and the urban distances.*
- *An ear for Chinese dialect and it comes off on the English page.*
- *A talent (like Castenada) to play the Anglo-fool, thus highlighting the Chinese-ness of each day and human life.*
- *An elegant and witty involvement and understanding of America: its schlock commercials, vibrators and sex; its McDonalds, junk food, War Bonds and freedom; its day-glo lust and slippery cash.*

This continual counter-point at times transforms Chinese self-lessness, abstinence, worship of Mao and spare material wealth into a more Christian than Communist society. Orville is hog farmer, father and journalist. What Don Juan did to your sense of Spirit, **In the People's Republic** *does to my sense of Citizen.*

—Peter Warshall

In the People's Republic
(An American's Firsthand
View of Living and
Working in China)
Orville Schell
1977; 269 pp.
$8.95 postpaid
from:
Random House
455 Hahn Rd.
Westminster, MD 21157
or Whole Earth



Courtship in China

There are 20 communes and 460 production brigades in the county.

Every commune has its own hospital.

There are 586,000 meters of new stone terrace.

There are 220,000 meters of river dikes.

Forty percent of the land is already under mechanical cultivation.

There are 420 scientific teams circulating around the county, comprising 2500 people.

In 1966 the county had a total output of 80 million chin of grain. By 1974 total output had climbed to 340 chin. . . .

Almost every Chinese statistic is impressive. If statistics were as gripping as matters of life, love and death, the cause of the Chinese revolution would long since have spread throughout the universe without a shot being fired.

•

While we have been sitting around this large table listening and asking questions, I have not been able to take my eyes off one man. He has a distinctive look. Unlike many of the other students, who in spite of their dedication to manual labor, still have a somewhat bookish look to them, this man is short, wiry and swarthy. His hair sits on his head forming a kind of whirlpool effect — a giant cowlick. His face bears several small pockmarks. When he finally introduces himself, he does so with great pride and a smile on his face. He is a street sweeper. He speaks with a disarming confidence about studying "sweeping" at the university. And in this world dedicated to the glorification of ordinary work and the ordinary man, it seems completely natural to hear him talk as part of one of China's finest universities.

The Arms Race is a tacit conspiracy

Dear CQ/SB/POINT/whoever,

. . . The trouble with manyparanoid conspiracy-theories is that they're too literal — they see actual, overt, cloak-and-dagger plotting where in fact there's merely a "tacit conspiracy" of coinciding or complementary interests. But when such a tacit conspiracy does exist, the exaggeratedly melodramatic perceptions of the paranoid are often very useful in bringing it to our attention — just as early-morning or late-evening black and white photographs, with their exaggeratedly long black shadows, are often of use to geographers and archaeologists in showing up subtle surface-features of the lancscape. And imagining a conspiracy (provided we don't allow ourselves to be taken in by our fantasies, as the paranoids do) is often a useful way of allowing ourselves to detect subtle alliances and antagonisms in the body social, of which the participants themselves may be wholly unaware.

In this spirit, then, I suggest that there was a "conspiracy" between the left-wing radicals and the Law-and-Order conservatives back in the late '60's and early '70's; that there's a "conspiracy" between cops and robbers in many a city today (Santa Ana being one conspicuous exception!); and that there's another such "conspiracy" underlying the Arms Race. The question then becomes — what are the common interests that the "partners" in these "conspiracies" are banded together to protect?

If you remember the left- and right-wing ideologisms of the last decade, you'll recognize easily enough that they fitted together as Thesis and Antithesis — in other words, they complemented each other. Each served the other as antagonist in the same archetypal drama — and the sameness of the drama was ensured by the fact that, underneath, each subscribed to essentially the same vision of the world and what it was all about. Both sides were materialists; both believed that Man was essentially an economic animal; etc., etc., etc. And both had a common interest in maintaining this world-view, in terms of which both sought to find a (I believe essentially illusory) meaning for their lives.

The reason their battles are now, essentially, a dead letter is that a new ("synthesis") world-view is growing increasingly important, in terms of which the old "either-or" polarities no longer hold. Now it's available, people feel free to opt out of the left-or-right alternatives which were all the old melodrama held out for them; and, increasingly, they're doing so. In effect, the conspiracy broke down because it was exposed for what it was — a tacit, limiting agreement on the "rules of the game" which arbitrarily excluded any real grounds for resolving the issues that it raised. (For a complementary approach to this theme, see Willis W. Harman's **An Incomplete Guide to the Future.**)

I submit, then, that by exposing the "conspiracies" involved in the cops-and-robbers type approach to policing and in the Arms Race, we will also automatically reveal the existence of real and practicable alternatives which the "tacit conspiracies" involved are currently hiding from the public view. And once this is done, and the analysis accepted by a critical number of those in relevant positions in power, we can begin to run the Arms Race backwards, sideways, upside-down, or any other way we want. But not until then, because there's no way to fight a conspiracy (particularly a tacit one) on its own terms. . . .

Julian Reid
Victoria, British Columbia
Canada

THE POVERTY OF POWER

Reviewed

BY KENNETH E. BOULDING

It is distressing when a good man writes a bad book. Barry Commoner is a good man, as not only the genial picture on the dust cover but his many writings testify. He has a deep concern for the human race and the lovely planet it inhabits. In the arid world of science he is a prophetic voice, warning us of our follies and urging us toward better things.

Nevertheless, this book is a very bad one. There are logical fallacies on almost every page. There are a considerable number of passages that would serve admirably in examinations to test students' understanding of social and economic systems, for any student who could not detect the fallacies would deserve to flunk the examination.

Barry Commoner is a very honest man, but he has written what in many ways is a dishonest book, a political tract disguised as scientific statement. He has a persuasive argument that may convince many readers, but which in fact leaves out some of the most essential variables in the problem. This situation is all the more regrettable since the book ostensibly is an attempt to look at a problem of great importance to the human race from the point of view of many different disciplines. It illustrates, however, one of the great dangers of interdisciplinary work: that without a constant check from the disciplines themselves, the interdisciplinary easily becomes the undisciplined.

Barry Commoner's recent book on energy has received widespread and essentially automatic acclaim. Those not in the chorus have kept their opinions to themselves, with the illustrious exception of economist and systems scientist Kenneth Boulding. His scathing review appeared in the December 1976 Society Magazine *($15.00/yr from Transaction, Rutgers University, New Brunswick, NJ 08903.)*

The piece was sent to us by Bill Chaloupka from Honolulu, Hawaii, with the comment, "Two charismatic leaders of a movement stand toe-to-toe, slugging (confronting, dialoging) it out. In the United States, alternative politics of whatever stripe tends to dismiss such duels as factionalist (aiding "the enemy"), diversionary (detracting good people from "real" problems), or exhibitionist (assuaging egos which we *have under control). So we studiously ignore some exchanges which could be instructive."*

–SB

The book's basic fallacy is the identification of "work" (in the physicist's sense of the word) with human values. Thus the second law of thermodynamics "is important because it explains how work – which is the only value that energy has for us – is gotten out of the flow of energy from one place to another." In elementary thermodynamics it is true, of course, that the Carnot cycle is only concerned with the transformation of heat energy into work (that is, mechanical energy or the motion of large masses) and that entropy is correspondingly narrowly defined. If, however, we want to generalize the second law to larger biological and social systems, it must be restated.

It is particularly dangerous to take a concept like entropy – which has a clear though narrow meaning in thermodynamics – and use it as a metaphor in other systems where it would have different meanings. A much better concept would be potential, which in the narrow case would be negative entropy. It is indeed unfortunate that historically entropy became defined in this negative way; for if we state the second law in terms of the diminution of potential, it makes a great deal more intuitive sense in terms of the increase in entropy (although in thermodynamic mathematics the two are identical, for minus minus is plus; which, incidentally, is not true in social systems where abstaining from bad is not the same as doing good.)

The generalized second law can be stated as follows. If anything happens, it is because there is a potential for its happening; and after it has happened that potential has been used up. Potential, however, means very different things in different systems. It is even different in a steam engine from what it is in electric current. It is still more different in biology, where the biological potential of the fertilized egg is gradually exhausted as the egg becomes an animal, which eventually ages and dies. And it is a still more complex concept in social systems, where the social evolutionary potential which created the great religions – or science itself, or a nation, a corporation, or a family – is used up as it is realized but also can be constantly renewed (as indeed biological potential is constantly renewed when new eggs are fertilized.) It is very dangerous, therefore, to generalize from the second law of thermodynamics into systems that are more complex. Yet Commoner bases his most essential arguments on precisely these generalizations.

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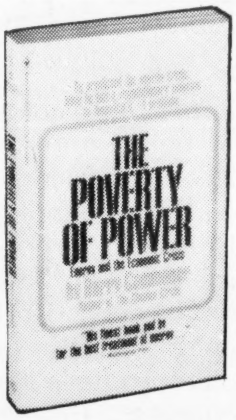


Poverty of Power
Barry Commoner
1976; 297 pp.
$2.50 postpaid
from:
Bantam Books, Inc.
414 E. Golf Rd.
Des Plaines, IL 60016

Commoner bases much of his argument on what he calls "second law efficiency," which is the ratio of the minimum amount of work that needs to be done to accomplish a particular task to the amount of energy that is actually used to accomplish the task. This ratio may have some interest to physicists, but it is as relevant to social efficiency as first order or engineering efficiency, which is the ratio of the energy that comes out of a process to the total energy that goes into it. The extent to which either first law or second law thermodynamic efficiencies are relevant to social efficiencies depends on the structure of social valuation coefficients.

Commoner clearly does not understand this concept. All processes involve inputs and outputs of many different kinds. In order to compute any kind of social efficiency, we must be able to multiply each input or output by a "shadow price" or valuation coefficient which reduces it to some measure of value such as the dollar or, if we like, the "social dollar." The ratio of the total value of what comes out to the total value of what goes in (in social dollars) is an approximate measure of the social efficiency of the process. This formula, however, does not account for the different time intervals between input and output; and the best measure of social efficiency is the social rate of return expressed as a percent per annum.

A process that has a higher first law efficiency than another could easily have a lower social efficiency; the energy that comes out – as identified by the physicists or the engineers – can easily have a lower social value in the first case than in the second. Similarly, a process which has a higher second law efficiency than another could also easily have a lower social efficiency if the work that is done in it produces a product with a low social value. If the social valuations of different inputs and outputs are in the same proportion as the relative price structure in the market, then social efficiency is measured by the rate of profit (which Commoner so much despises).

Social valuations do not, of course, always correspond to market prices, so that rates of profit are only first approximations to social efficiencies; but they are likely to be much more accurate than any efficiencies measured by either first law or second law physical efficiencies. Second law efficiencies especially, no matter how much blessed by the American Physical Society, are a very poor indicator of the socially most efficient uses of energy.

The last chapter of the book is a naive exposition of a vulgar Marxist economics. It exhibits a profound misunderstanding of the determinants of the rate of profit in society and an even more profound misunderstanding of the nature of capital accumulation, which Commoner apparently thinks should always be made out of profits. It involves a naive misunderstanding of the causes of unemployment, which Commoner seems to think comes from labor-saving inventions. He does recognize the fact that existing communist societies are tyrannical; but he retains a naive belief that somehow the centralization of power – which centrally planned economies involve – and the necessity for consensus on major economic decisions – which is implied by the destruction of the market and the substitution of a planned economy, – can all be magically achieved while retaining political liberty and democratic institutions. It is as if a biologist argued that because unicorns can be imagined they must exist, despite the remarkable absence of empirical evidence for their existence.

In a great many matters of detail, as well as in its broad theoretical outline, the major propositions of the book are extremely doubtful. Thus Commoner is extremely critical of the American oil companies for investing abroad rather than in further developments of American oil because of the high profits attached to the former and the lower returns on domestic exploitation. He argues, on rather dubious evidence, that we have enough oil in the United States to meet our domestic needs for fifty or sixty years; and by that time, he says, we will be able to rely on solar energy and other renewable sources – so we do not need to go to nuclear energy and all will be well.

This conclusion is sheer Pollyanish optimism. Within this period solar energy can save perhaps 10 to 15 percent of our energy requirements through economies of space heating and domestic hot water. Solar power stations with present technology would necessitate a very large increase in the relative price of electricity before they would be socially or privately profitable. We do not simply want energy; we want it where and when and in the concentrations that we want. The brute fact is that, with presently visible techniques and at present energy prices, the solar energy that falls on the average square meter of the earth is at the moment not worth picking up. If it is to be worth picking up prices must rise sharply, reflecting more real resources going into energy storage, transport, and concentration – which means that there are fewer resources left over for other things.

It is particularly odd that Commoner is so angry with the oil companies for conserving American oil supplies. We would think it would be very much in the selfish national interest of this country to import as much Arab oil as we possibly can now and conserve our domestic reserves against the time when oil is going to be truly scarce.

[more →]

Commoner has strange nostalgic attachments, for example, to trolley cars. Having lived on a trolley car line in my youth I can testify that they were almost unbearably noisy, slow, clattering, and uncomfortable, and that they rarely went where you wanted to go. They symbolize, furthermore, a class society, in which the lower class rides the trolley cars and the upper class rides in carriages or expensive automobiles. For all his socialist pretentions, Commoner's nostalgia is essentially for a class society in which the working class knows its place and does not have improper ambitions to grow rich by increasing labor productivity and applying outside energy in the process of production. He dislikes the energy-intensive American agriculture so much that one suspects he also has a nostalgia for the horse, an inefficient, hay-burning, one horsepower solid polluter that in 1888 ate nearly a quarter of American food production.

The basic theoretical problem of this book is that it has no adequate theory of production. Commoner writes as if energy in a physical sense were the only thing that mattered. He does not even deal with materials, which are as important a part of the production process and may be even more limiting under some circumstances than shortages of energy. He does not deal at all with the knowledge, know-how, or informational aspects of production, whether on the side of knowledge of how to find new sources or of how to utilize energy for the selection, transportation, and transformation of materials into products. There are no real people with either desires or skills and knowledge in his system. His political philosophy is the socialism of an abstract aristocrat.

The failure of this book is all the more tragic because the problems with which it deals, or with which it is ostensibly dealing, are both real and extremely important. The human race was extraordinarily lucky to have fossil fuels in the first place, for these are in some degree an accident of geological history; and there may well be other planets in the universe, rather like the earth, that do not have them.

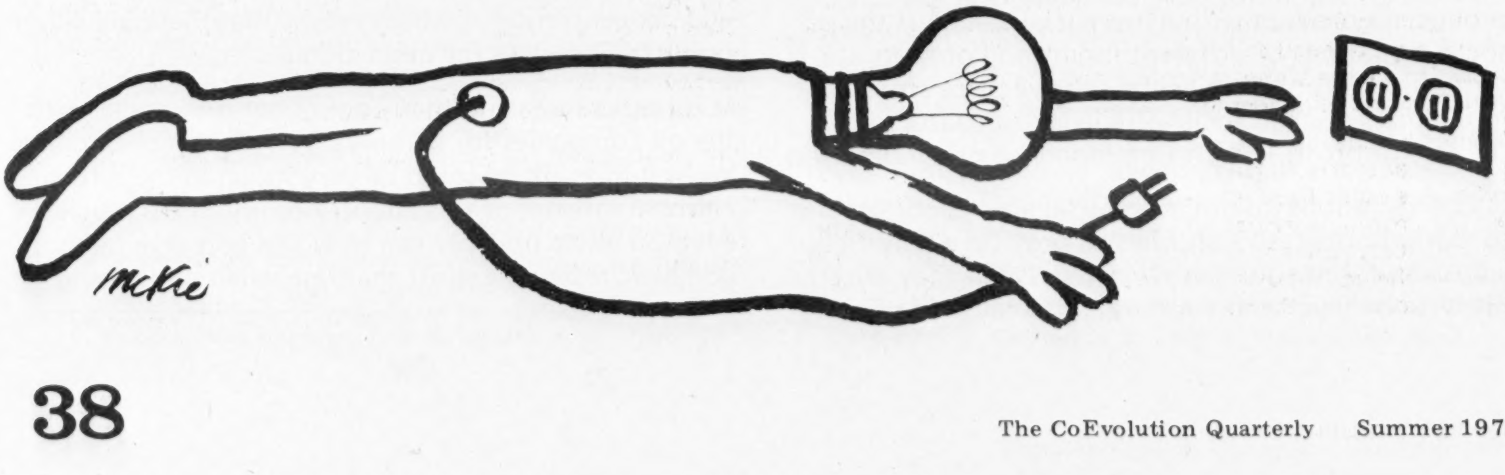
If the earth had not had fossil fuels, the history of the human race would have been very different. We probably would have developed science; we might have discovered electricity, electronics, radio, television, and so on. But without using up the energy capital of the earth by burning up the fossil fuels and other energy capital like uranium, we would not have been able to make surprisingly large numbers of people relatively rich. Without fossil fuels the mass of mankind would be relying on energy income from solar energy, a situation making for pretty lean pickings. Certainly with early technologies involving only animal power and human power for work, with a little wind and wood for fuel, we would have continued to have societies in which any enjoyment of products beyond bare subsistence was a privilege of the very few simply because of the inevitably low labor productivity which the use of solar energy implied.

Using up our energy capital will not bring a golden age of high second law efficiency, but a return to a grinding poverty for most of mankind and a high probability of essentially aristocratic or tyrannical societies (perhaps disguised under socialist propaganda) – unless much more efficient ways of using solar energy and its derivatives can be devised. The case for a much enlarged program of research in solar energy, therefore, is very strong, though not necessarily for the reasons Commoner suggests. Indeed, at several points in the book Commoner offers sensible conclusions derived from specious and fallacious arguments; the need for research in solar energy is one of these.

Nevertheless, it is grossly misleading to suggest that solar energy is a sure thing and that in fifty or sixty years we can derive all our energy needs from it. There is no current evidence to suggest that this statement is true. Under these circumstances it seems unwise to foreclose prematurely on the nuclear option, although the dangers, costs, and uncertainties of nuclear power are very great. There is a good deal to be said for going cautiously and more honestly with the nuclear option than we have been going; but to suggest – as Commoner does – that it is certainly unnecessary is an irresponsible conclusion in light of the uncertainties of the present situation regarding alternative sources of energy and the certainty of running out of oil and gas.

If this book is believed, it could do a great deal of harm. It has already appeared in condensed form in articles in **The New Yorker** and has not aroused any indignant comment from the readers. The publisher's puffs exhibit an uncritical enthusiasm. It is extremely well written in a lively and persuasive style. It may lull its readers into a wholly false and far too optimistic image of the future. It may discredit further attempts which are desperately necessary for a genuinely interdisciplinary attack on the problems of the long crisis ahead.

There is a real danger that environmentalism may become a quasi-dogmatic religion losing touch with the real needs and desires of real people, especially of poor people. Unless it produces a sharp critical reaction, this book will not contribute much to our negotiating the difficult years that lie ahead. ■



Publishers Weekly

In These Times

And they said it couldn't be done! **In These Times** *is an intelligent socialist weekly newspaper which presents world, national and local news in a non-sectarian, non-rhetorial manner. Attractively laid-out and professionally written,* **ITT** *is a pleasure to read, not a punishment. Sports, ecology, movies and books are regularly discussed in its pages, in contrast to most other Left newspapers where internecine wrangles and "Politics" seem to define the boundaries of the universe. Dedicated to helping forge a democratic Left majority in the U.S.,* **ITT** *clearly has its work cut out for itself . . . a fact it acknowledges by an optimism tempered with realism. Apolitical cynics be forewarned:* **ITT** *can be habit-forming.*

—Jay Kinney

IN THESE TIMES

In These Times
$15 /yr or **$5** /4 months

from:
New Majority Pub. Co., Inc.
1509 N. Milwaukee Chicago, IL 60622

It would be easy to dismiss The Tubes (and Frank Zappa and Alice Cooper) as unreservedly decadent. But "decadent" is one of the most confusing rhetorical slaps in the radical lexicon.

Let's make some distinctions. It was decadent for Baron von Krupp, the Nazi munitions manufacturer, to give solid gold neck-tie clasps in the shape of miniature bombs to his homosexual lovers. But it was not decadent for him to be gay . . .

The distinction is between the outrageous and the decaying. It is too tempting to mislabel every capitalist outrage; it is falsely hopeful to assume each bizarrity symbolizes the end of the empire. . . .

I'm just saying that The Tubes tread a thin red line between decadence and satire. Perhaps as the material to be satirized — the stuff of advanced capitalist culture — reaches the infinity of the bizarre, the limits of parody must expand as well.

Or, and I'm convinced of this, perhaps The Tubes play out a rock corollary of an old saw: the best satirists become nihilists in the absence of a mass political movement to change the rot the artists parody so well.

Herman Kahn's "New Class" is a label of convenience

When I first read the "New Class" talk by Herman Kahn in the Spring '77 **CQ**, I was disturbed by Kahn's concept of the New Class but I was unable to put my finger on exactly why. In the month since, I've continued to think about Kahn's presentation and ask myself why the New Class concept of which Kahn spoke was so familiar somehow and yet so skewed.

Today while reviewing Kahn's definition of this supposedly new class it suddenly hit me. The "New Class . . . earn their living by the use of academic skills, language skills, esthetic skills, analytical skills," says Kahn. In other words, Kahn is defining "Intellectuals."

Going through the article I substituted the word "Intellectuals" for "New Class" at each opportunity. Almost without exception this substitution worked, but with the curious result that suddenly Kahn's amusing and clever insights seemed somehow banal and foolish.

Even granting that the New Class in its broadest sense includes a full variety of mental workers (not just, strictly speaking, intellectuals), we are still left with the question of "why a new label for those who work with their minds?" Kahn referred back to Milovan Djilas as the originator of the category if not of Kahn's precise use of it. Clearly Kahn's New Class concept shares origins with the New Left-popularized mid-60s theory of the "New Working Class" which attempted to understand the growing role of those with technical, clerical and professional jobs in maintaining American capitalism. But while that theory was only partially successful in giving students a perspective on their future post-graduate roles, it was at least a straight-forward attempt to seek a better understanding of modern Capitalist class stratification.

Kahn's intent is initially more mysterious and yet becomes clearer if for "New Class" we substitute "Pointy-headed intellectuals who can't even park their bicycles straight," or perhaps, "Effete snobs." In his long-winded and circular way Kahn is trying to isolate academics, intellectuals, professionals, etc., by defining them as a class unto themselves, while blurring other American class distinctions. He employs other sleight of hand to (in his own words) "confuse the discussion a little bit by taking the neo-liberal part of the New Class and using them for the whole . . ."

What is this but self-indulgent nonsense . . . and pernicious nonsense at that? I'll gladly grant that new perspectives can sometimes result from relabeling a group or phenomenon and that mental workers can benefit from learning how their shared assumptions and experiences set them apart from others. However the upshot of Kahn's relabeling seems largely to be that the portion of the so-called New Class which most consciously services Corporate/Governmental policies is reluctantly labeled New Class and then swept under the rug, while the "50%" which Kahn calls "neo-liberal" are put on the line-up and given the 3rd degree. Looked at in a different way, Kahn would be paid little heed if he ranted against "Damned leftist intellectuals," so he invents a new label encompassing all intellectuals, excuses the half who are on the Right, and proceeds to deliver his critique.

This would be merely silly if it were an isolated sermon, but it appears that this touting of the "New Class" analysis has only just begun and what is now a term used by a few neo-conservatives may be picked up at large and promulgated in all its ambiguity and imprecision.

Kahn is delighted to define American politics in "a simplified fashion: a war of the New Class versus the middle class. New Class versus working class. When you look at politics that way, everything falls into place." At least everything falls into the place which Kahn prefers. Later in his talk Kahn coyly calls America a "two-class society." The hunters (the real Americans) and the non-hunters (New Class). No matter that he lumps the upper class and the middle class together (hunters) in contrast to the upper middle class (non-hunters); no matter that earlier he called the New Class "very hostile . . . especially to the upper middle class." Let the contradictions and mushy dual-definitions pile up . . . pay them no heed as long as we see things as the New Class against everyone else.

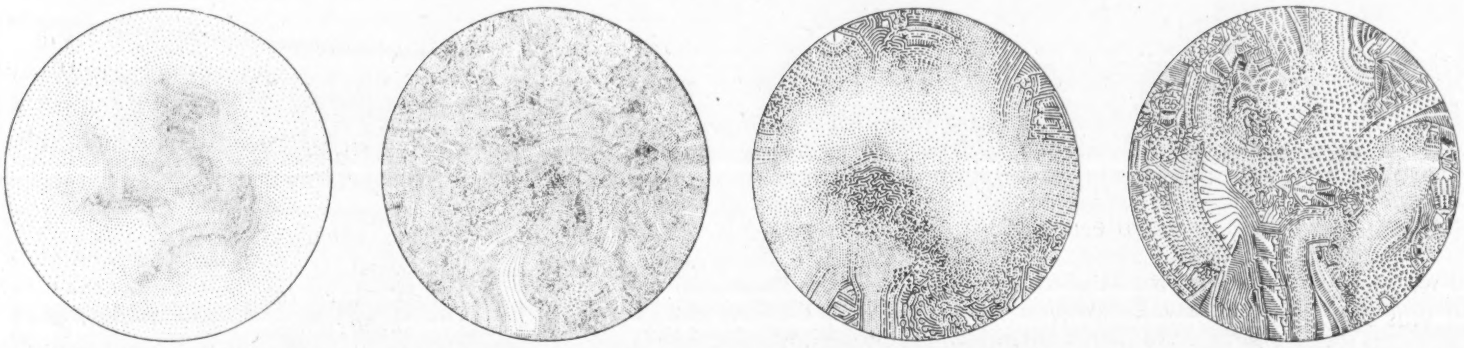
Five years ago we were treated to the coining of the "Silent Majority," a convenient term which made a virtue out of silence and allowed an opportunist to speak for the mute. Now we're presented with the "New Class," a malleable term which scolds the engaged and the vocal.

I assume that in his and Bruce-Briggs' forthcoming book on the New Class many of the inconsistencies present in his **CQ** talk will have been dealt with. Clearly his session with the Governor and staff was not meant to be gone over with a fine-toothed comb.

But from all appearances the very heart and intent of his New Class conceptualizing involves a calculated misrepresentation of reality. According to Kahn, "At the moment I don't think we have any serious big problems." None, it would seem, except those created by the New Class.

I've great respect for Kahn's cleverness, charm and high-powered intellect, and in raising these objections I feel somewhat like a nightlight challenging a laser. But too much of his talk hit me as soft-sell demagoguery to let it go by without a squawk.

—Jay Kinney
San Francisco, California



Remarks on Recombinant DNA

BY JAMES WATSON

My position is that I don't regard recombinant DNA as a major or plausible public health hazard, and so I don't think that legislation is necessary.

My experience is partly as a scientist who has worked with DNA for . . . it's getting close to thirty years, and as an administrator, a director of a laboratory where I have moral and legal responsibility for our work with viruses, and I think about it.

When it was clear you could work with recombinant DNA, people initially had two worries. One was, a number of us were working with common viruses which can make cells cancerous – under some conditions – and they thought, well, what if you took the gene which is the cancer gene, put it into our bacteria – K-12, *e. coli* – maybe this cancer gene could then spread through the population.

The second worry was that you could take antibiotic-resistant markers in combinations which don't exist and by genetic manipulations produce a bacteria which is resistant to practically everything, and this then might spread through the population.

James Watson co-discovered, with Francis Crick, the helical structure of DNA, for which he received the Nobel Prize in 1962. He is director of the Cold Spring Harbor Laboratory in New York, which has been doing research on cancer, bacterial virus, molecular genetics, and protein synthesis. He has authored **Molecular Biology of the Gene** *(1968, 1970) and the famously candid account,* **The Double Helix** *(1968).*

In March of this year Dr. Watson was invited by Governor Brown's office to speak in Sacramento, California, on the subject of recombinant DNA research, which is being considered for restrictive regulation by the state legislature. Speaking at the same time was Dr. Halsted Holman of Stanford University, in favor of regulation.

Because most of the press on recombinant DNA has violently opposed further research, and those arguments are familiar, I am presenting here only Dr. Watson's views, which contain some co-evolutionary news. Casually polling my environmentalist acquaintances on recombinant DNA, I find the ones who are primarily political are very alarmed, the ones who do scientific work are not. Evelyn, while typesetting this, said that's a snobby remark.

–SB

So a group of us, led by Paul Berg at Stanford, met one morning in April, 1974, at MIT and we said we would write a letter which said we shouldn't do those two types of experiments until a meeting was held in which we might discuss whether in fact these experiments posed any plausible hazard. We scheduled that meeting for February, 1975, at Asilomar in California.

As soon as the letter came out I began to get very queasy. A press conference was held, and the people who were organizing the meeting, of which I was not one, indicated that the scientists in renouncing their right to do particular research were doing something which hadn't been done before, and this was a very important step, and there was comparison made with the moral dilemmas which faced the physicists at the time that nuclear energy was being unleashed.

I always thought our action was rather minor.

Because of this publicity there was great expectations that something was going to happen which had never happened spontaneously – like a hydrogen bomb had never exploded spontaneously. And this was in a context which many geneticists had generated by saying that genetic engineering was around the corner. I've never seen the technology which would enable that, though I would love to be able to cure Tay-Sachs or sickle-cell anemia or any of these things by inserting genetic material.

A lot of people think that somehow you can enslave the masses by genetic engineering, whereas in fact the masses are already enslaved.

The general rule that seems to govern most of the people working with medical microbiology is that once you've domesticated a bacteria or a virus and got it to grow under conditions of a laboratory culture, it loses its virulence. It no longer has the ability to multiply in humans. If you could get the Legionnaire's Disease to grow well in a university laboratory, it probably wouldn't cause the disease. Biochemists generally live pretty long. (That's not true of organic chemists – they normally have a life span about five years shorter than other people, because those fumes that smell bad are bad.)

Anyway, Asilomar came up with what became the NIH (National Institute of Health) Guidelines. Working with the genes of *drosophila* (fruit flies) was safe, the toad got by, the mouse was in trouble, and humans were out. They got up at the end and said, "We've got a consensus." I got up and said that we got a consensus in the State Department about Vietnam, and certain members of the national press didn't like me. They made me out as someone who didn't care about children, the evil person who raced to get the Nobel Prize for DNA. If you were against regulation you were against motherhood.

Now, it was claimed that what we were now capable of was something uniquely new – in the sense that you would be able to assemble DNA material which doesn't normally exist. But in fact cells have an enormous capability to take up DNA through other means than the usual sexual recombination. You can change the heredity of plants by bacteria – the evidence is about 90% certain – plasmids pass into the plant cell and you have the bacterial gene functioning in a plant, and it causes galls. So DNA transfer I think is probably fairly common in nature.

There's a worry about exchange between bacteria. Could you create a new form of bacteria? Between two species there are often bacterial viruses or bacteriophages, which have a host range that allows them to grow in two sorts of bacteria. We know the virus can pick up genes from one and transfer them to the other. There's a very perceptive article published in **Bacterialogical Review** in October by a man from New Zealand, D.C. Reanney. He calls this "evolution by extra-sexual processes," or extra-chromosomal. He points out that maybe bacteria are just one species. They have relatively little DNA because if they need a gene for something, they're constantly being infected by viruses which will bring them the gene they want.

There are viruses which multiply in mosquitoes and will multiply in human cells. They will also multiply in plants. You can find cases in evolution – it's called convergent evolution – where the same things, such as pigments, appear in things which are apparently unrelated. This could very easily be a virus which has carried this DNA from one species to another.

We've been told there's a danger of *e. coli* getting a gene for cellulase via recombinant DNA. If there were a real selective advantage for *e. coli* to have cellulase, which would do away with our species, it would have it already – by viral transfer or other means. Evolution is constantly trying to seek out the best set of genes for a given organism to occupy a niche. I do not worry about "monsters."

Evolution hasn't stopped. Some of these people have made grandiose statements about "scientists interfering with God's world." The world is changing all the time. Every day there are new bacteria produced in unknown quantities. Viruses are produced. You feel punk one day, I feel punk, we don't know what's making us feel punk. The only thing that's new is some people are saying it's recombinant DNA.

I can fully understand why we're in this room. We're in this room not, I think, because the community in any sense wants to control science but because scientists said there might be a danger. And if the scientists say it, the public should listen. I think they made a great mistake in implying they could distinguish between the possible dangers and that there was any plausible set of guidelines. Some people have said the guidelines are capricious. I think they're totally capricious and totally unnecessary. We must have wasted $25 million on those precautions by now and it's on its way to $100 million. I think it's the biggest waste of Federal money since we built all those fallout shelters.

[Stanford medical professor Halsted Holman then gave his opposing view, that public debate and possible regulation on this matter is correct for the same reason it is right for a patient to know what is going to happen to him in surgery, what his chances are, and that nothing will be done without his "informed consent." The issue here is "informed consent by the public." In the questions following Dr. Holman's presentation Prof. Watson was prodded to reply. . . .]

Watson: Informed consent in this thing is meaningless because you can't tell people what kind of risk is going to occur. I think it's as difficult as trying to decide whether you should be a Jew, a Catholic, or a Protestant on some sort of logical grounds. It's like arguing religion, because you have the same number of solid facts. That's why we don't argue religion in polite company. People just get mad at each other, because they can't give each other any facts.

Question from audience: It's a new political principle if you say, "The less facts you have, the less the public has a right to make the decision." Up to now we've always heard, "The more facts you have, only scientists and specialists understand these facts, therefore the public shouldn't make the decision." If there's no facts, the public is no worse off than the scientists.

Watson: There's a tradition in western society of freedom. You generally let people do what they want unless it causes damage to other people. It's silly to control where there's no evidence of danger. I am totally agreed that the public should participate in any process where they can be given facts to think about. But the tradition is, you don't call fire until you see it.

The trouble with trying to assess recombinant DNA hazard is you can't count about it. For example, how would we know if recombinant DNA is bad for enfeebled patients? Well, I guess you would say a higher mortality at Stanford University Hospital, where there's recombinant DNA research, compared to a hospital in New York where there isn't. That may sound cynical, but you have to know that something bad exists before you can do anything. If suddenly the incidence of *e. coli* infections doubles in a matter of six months you would go into these people and see if they have one of these things produced in Stanley Cohen's lab. And if someone wants to sue Stanley Cohen for being irresponsible, they can do it.

You've got to smell a little smoke before you decide where the fire is. There's so many fires. Every newspaper we read has some new scare. Sanity demands a limited number of scares.

Maybe I'm just worried about too many other things to take this seriously. As I explained to Governor Brown, these flame retardants which are in all children's clothes – tris – are the most potentially dangerous carcinogens around. They threaten every child in California and in the whole country. Tris is bad. It's taken up through the skin. That's a real danger. ■

Understanding Whole Systems

An Introduction to General Systems Thinking

As one of those persons driven to try to "understand" things, I have been remotely fascinated by General Systems Theory for several years. It always seemed it would be too much work to approach any closer to this awesome-sounding subject via any of the "introductory" texts. When Weinberg's book was published last year, I took a chance and bought it immediately, based solely on the strength of his previous **The Psychology of Computer Programming.**

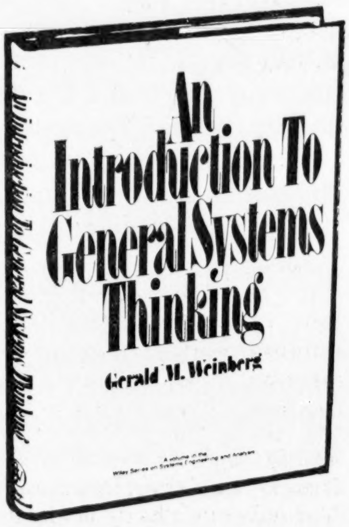
I haven't been disappointed. Viewed from just about any perspective this book is an exemplary introduction to a complex subject. The fascinating observations are well-organized and are stated in a consciously informal tone. Thoughtful questions for research and additional readings are provided for those who want to go beyond the scope of the book. Over a hundred wide-ranging quotes add to the fun.

I don't know a thing about the competition — I doubt if there is any.

—William Courington
[Suggested by Dennis Geller]

It has competition — Ashby's **Introduction to Cybernetics,** *Bateson's* **Steps to an Ecology of Mind,** *and others — but this is far the best INTRODUCTION.*

—SB

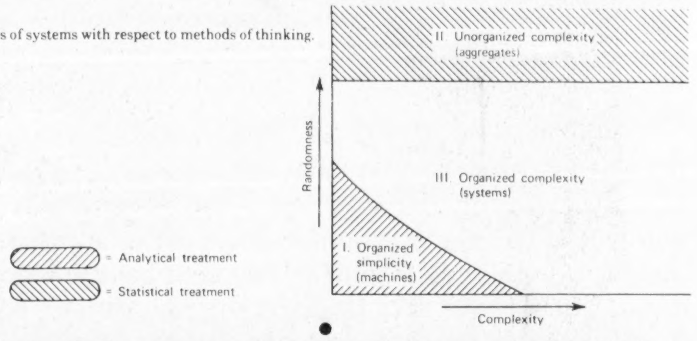

An Introduction To General Systems Thinking
Gerald M. Weinberg
An Introduction to General Systems Thinking

An Introduction to General Systems Thinking
Gerald M. Weinberg
1975; 269 pp.

$16.95 postpaid

from:
John Wiley & Sons, Inc.
One Wiley Drive
Somerset, NJ 08873
or Whole Earth

Types of systems with respect to methods of thinking.


II. Unorganized complexity (aggregates)
III. Organized complexity (systems)
I. Organized simplicity (machines)
Randomness
Complexity
= Analytical treatment
= Statistical treatment

●

Paradoxically, one way to master the power of a tool is to probe its weaknesses. Thus we offer the *Count-to-Three Principle:*

> IF YOU CANNOT THINK OF THREE WAYS OF ABUSING A TOOL, YOU DO NOT UNDERSTAND HOW TO USE IT.

Faithful adherence to this principle would protect us from the enthusiasm of the optimizers, maximizers and other species of perfectionists — but mostly from ourselves.

●

Consider the following passage:

> General Motors exists to put out cars, not metal scraps, although it extrudes both. Universities exist to produce educated persons and scholars, not retired professors or academic failures.

That seems incontrovertible, but now consider what we would have thought had Miller written:

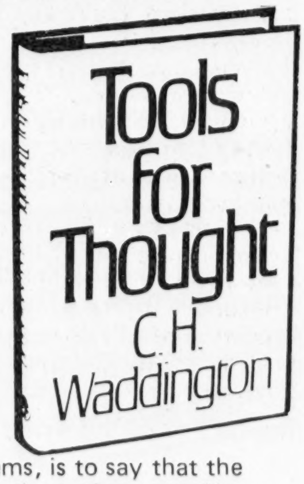
> Beavers exist to control floods, not to produce piles of wood chips. The oceans exist to produce fresh fish, not mud deposits or dead whales washed ashore.

With "man-made" systems, we talk about "purpose," whereas such language is forbidden for "natural" systems. Yet much of the dissatisfaction with our man-made systems stems precisely from disagreement about what the "purpose" of the system is: that is, what the system "really" is. The answer, of course, is that the system has no "purpose," for *"purpose" is a relation*, not a thing to "have." To the junk dealers, General Motors *does* exist to put out scrap metal, yet the stockholders probably couldn't care less whether General Motors is producing cars or string beans, as long as it is producing profits.

Tools for Thought

The renowned biological philosopher C.H. Waddington did a generous and helpful thing shortly before he died. He assembled in one place with one sharp understanding all of the recent conceptual discoveries about the adroit handling of concepts. Browsing his book is like shopping in a fine hardware store. It and the Weinberg book above are necessary and damn near sufficient for one to grasp the world's tail.

—SB



Tools for Thought
C.H. Waddington
1977; 239 pp.

$10.95 postpaid

from:
Basic Books, Inc.
10 East 53rd St.
New York, NY 10022
or Whole Earth

Chreods and Epigenetic Landscapes

A phrase used to describe such systems, is to say that the pathway of change is canalized. For the pathway itself one can use the name *chreod*, a word derived from Greek, which means 'necessary path.' Many types of change going on in society have a more or less well-developed chreodic character; once they have got well started in a certain direction, it is very difficult to divert them.

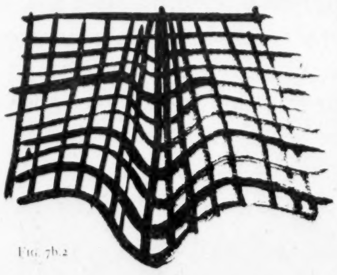


Fig. 7b.2

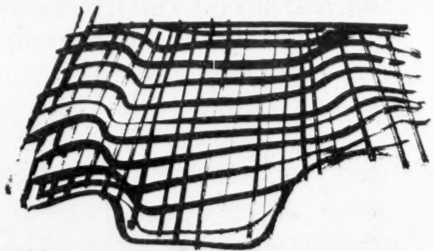
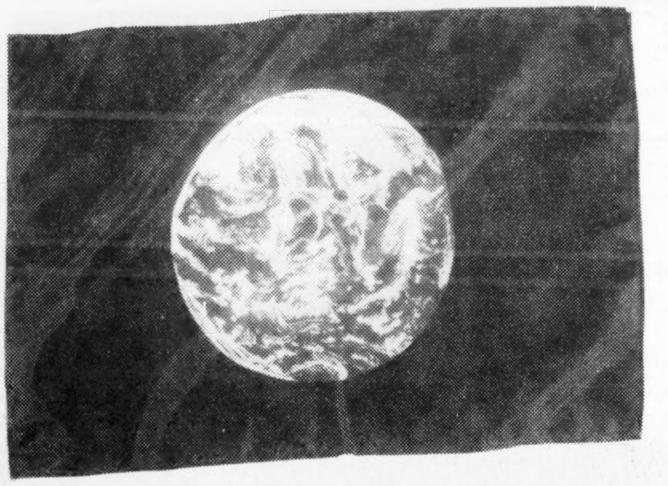


Fig. 7b.3

Different canalized pathways or chreods may have rather different types of stability built into them. These can be pictured in terms of the cross-section of the valley. You may, for instance, have a valley with a very narrow chasm running along the bottom, while the farther up the hillside you go, the less steep the slope; with such a configuration of the attractor surface, it needs a very strong push of some kind to divert a stream away from the bottom of the chasm (7b.2). If the system is acted on by only rather minor disturbances, it is likely always to stay very close to the bottom of the valley. If one can compare several examples of such a system, there will be very little difference between them, and they will look very invariable. In contrast, we have a valley which has a very flat bottom, and the hillside gets steeper and steeper as you go away from the central stream (7b.3). Then, minor disturbances can easily shunt the stream from one side of the flat valley bottom to the other; it would be rather a matter of chance where in the water-meadows in the valley bottom it flows. If one looks at a number of examples of a system with this type of stability, there will be a lot of small-scale variation between them.



Earth Flags

Long-scarce but still in demand, the Earth Flags are finally back, with even nicer design and material.

—SB

Earth Flags

17-1/2" X 11" **$ 3.50** postpaid
3' X 5' **$19.50** postpaid

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558 Santa Cruz Ave.
Menlo Park, CA 94025

Mission to Earth: Landsat Views the World

Best coffee-table book we've reviewed since **Photographic Anatomy of the Human Body** *(EPILOG, p. 458). Stunningly gorgeous color photos of nearly everywhere by 115-mile pieces (400 plates). First you check where you grew up, then where you are now, then you go travelling. Everyone who puts their hands on the book says, "Hey, look at this!" A buy.*

—SB

Mission to Earth: Landsat Views the World
Nicholas M. Short, Paul P. Lowman, Jr., Stanley C. Freden and William A. Finch, Jr.
1976; 459 pp.
$14.00 postpaid
(No. 033-000-00659-4)

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Superintendent of Documents
U.S. Gov't. Printing Office
Washington, D.C. 20402
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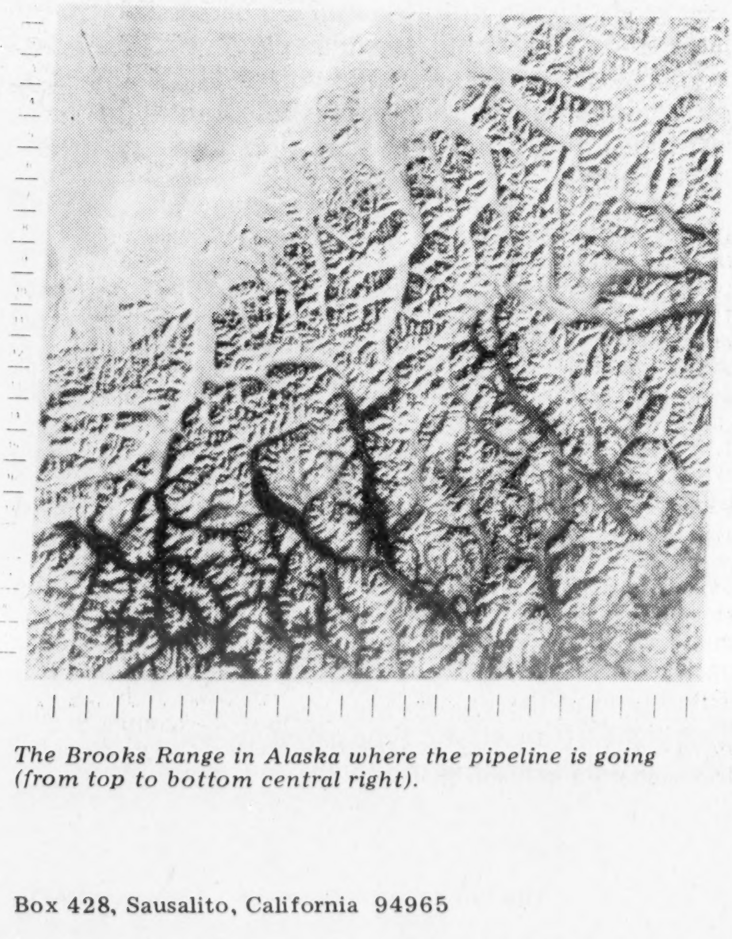
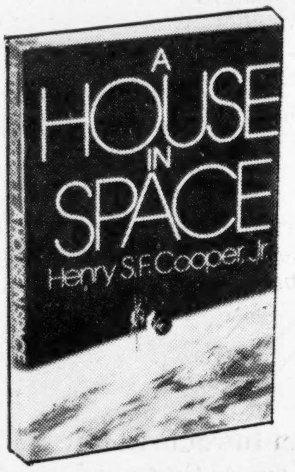


The Brooks Range in Alaska where the pipeline is going (from top to bottom central right).

A House in Space

No book, including the ones by astronauts, has given so compelling an account of life in Orbit. Henry Cooper, on assignment from **The New Yorker**, *talked to all the participants in the three Skylab missions which accumulated a total of 171 days — nearly six months — in constant weightlessness. What they found there were the kind of amazing occurrences that you will find yourself starting conversation with. The astronauts spent hours searching for lost objects that wandered off. Whenever they opened a drawer the stuff inside exploded out at them in slow motion. Whichever way they stood in a room was "local down." The third crew went on strike. Fascinating problems, ingenious solutions in a definitively exotic environment.*

—SB



A House in Space
Henry S.F. Cooper, Jr.
1976; 184 pp.
$8.95 postpaid

from:
Holt, Rinehart and Winston, Inc.
383 Madison Ave.
New York, NY 10017
or Whole Earth

An astronaut could almost select, with his eyes, which vertical he wanted to follow, the room's or his own private one. "All one has to do is to rotate one's body to [a new] orientation and whammo! What one thinks is up *is* up," said Kerwin, the first crew's science pilot, who had discovered the phenomenon. "It's a feeling as though one could take this whole room and, by pushing a button, just rotate it around so that the ceiling up here would be the floor. It's a marvelous feeling of power over space — over the space around one. Closing one's eyes, of course, makes everything go away. And now one's body is like a planet all to itself, and one really doesn't know where the outside world is."

•

The astronauts were continually surprised at how much time they spent looking not only at oceans and deserts but also at snowfields and mountainous areas, in none of which could they see any sign of life. In contrast to the Apollo astronauts who had looked back from the moon and described it as an oasis in space, the Skylab astronauts thought the earth a barren place. The toughest part of the earth to survive in that they passed over, the third crewmen thought, was the area from Tibet across Outer Mongolia. "There is nothing but a great big nothing out here now," Gibson said during the third mission. "Northern China, Outer Mongolia, and all that gold stuff: the Gobi Desert." Carr, especially, thought man had a tenuous foothold on his own planet, where the checkerboards of his cultivation seemed to be packed into the few temperate areas, or fringed the deserts and oceans like a green mold struggling for existence. "Not much of the earth is hospitable to man," he radioed down one day — as though Mission Control's presence there had somehow made it seem an alien place. "We don't occupy much of our world. We're crowded into small areas."

•

Lousma had said once, "A guy like me, who likes both sunsets and sunrises, mostly gets to see sunsets. But here, in space, every day we get sixteen of each." Whatever they were doing, the astronauts frequently crowded around the window at such times.

There Ain't No Graceful Way

URINATION AND DEFECATION IN ZERO-G

ASTRONAUT RUSSELL SCHWEICKART TALKING TO PETER WARSHALL

Here's another spillover from Peter Warshall's Watershed Issue (Winter 76-77 **CQ***). Rusty Schweickart flew on Apollo 9 and was the first astronaut to go on a spacewalk without an umbilical. He's one of the few Apollo men still on astronaut status and is working at present on the Space Shuttle program. After Peter had interviewed him about his Virginia watershed, they got talking about, er, going to the bathroom in Space, where water does not shed.*

–SB

Peter Warshall: The thing that most people are really interested in, of course, is how you did it without gravity. That's what everyone asks: "Does it just float up?"

Russell Schweickart: Yeah, well it's kind of interesting Peter, because I just came back from a thing at Purdue University. I spent about two and a half days with a bunch of kids out there. It was a really nice program and I had four kids who were sort of my personal hosts and hostesses, and we really got into that line of material. You're right, everybody wants to know. That'd be kind of fun sometime, to just sit down and put together a whole article on how you do it in zero-g. Satisfy everybody's scatological curiosity.

It's something everybody's afraid to touch. Well, look if you've got a couple of minutes, I can describe a little bit of it to you. It's the end of the day, and why not.

Warshall: I'd love to hear it.

Schweickart: Well, of course there are basically two regimes. One is in the space suit and the other is out of the space suit. While you're in the space suit – which people always really mistake as a long period of time – we really wear the space suits relatively little. In Apollo and Skylab we wore the suits during launch and took them off shortly after getting into orbit, and put them on again only for EVA's (extra vehicle activities). So you can figure out how much time that is. And then again, depending on the mission, sometimes we wore them for entry and other times we did not. So you're basically talking about hours, maybe, depending again on the mission; anywhere from say, 4 to 20 hours, out of anything from 8 to 80 days.

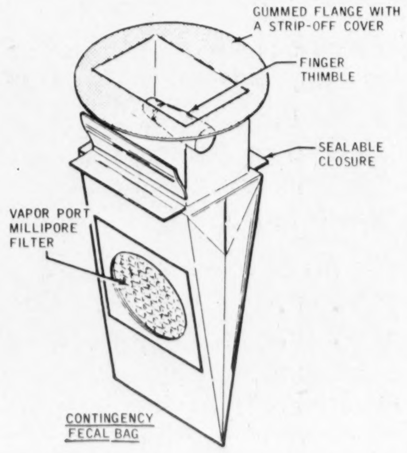
Warshall: It's not really that much.

Schweickart: Yeah, it's not that much. But it's a fairly critical time, you know. When you're in there you don't have much choice, so you've got to design for it. Okay. So in the suit, for urine you use like a motorman's bag, which is basically composed of a bladder that holds about – boy, my numbers are really slipping Peter – but something between a liter and two liters, if I remember. A rubber bladder type of thing that sort of fits around your hips, and a roll-on cuff which is essentially a condom with the end cut out that's rolled over a flapper-type valve, you know, just a rubber flapper valve. It forms a one-way check valve.

Warshall: Oh, I see, so you don't have to do anything.

Schweickart: No, you don't do anything. You just roll it on as part of the suit-donning procedure, and then urinate into it through the one-way valve. There are lots of little cute problems and uncertainties. Unless you're an extremely unusual person, since the time you were about a year and a half old or so, you probably have not taken a leak laying flat on your back. And if you think that's easy, let me tell you, you've got some built-in psychological or survival programs, or something which you've got to overcome. So that's a tricky little thing. And then there's always the possibility that in maneuvering around in a suit you can end up pulling off the condom, and there's always – we have three sizes you know, small, medium and large – in diameter, and there's always this little ego thing about which one you do pick. Of course the smart guy picks the right size, because it's very important. But what happens is, if you get too small a size it effectively pinches off the flow and you just turn yellow because you can't go; and if, on the other hand you've got an ego problem and you decide on a large when you should have a medium, what happens is you take your first leak and you end up with half of the urine outside the bag on you. And that's the last time you make that mistake. So it's a cute little trick there.

In terms of defecation inside the suit, there ain't no graceful way to do it. So what we do is, we wear what's affectionately called a fecal containment system. The good old FCS is essentially like a pair of bermuda shorts with a hole for your penis to stick out of to roll on this other thing, but fairly well sealed around there. It's a tight fitting elastic type garment, and it fits especially tight around the thighs and around the


GUMMED FLANGE WITH A STRIP-OFF COVER
FINGER THIMBLE
SEALABLE CLOSURE
VAPOR PORT MILLIPORE FILTER
CONTINGENCY FECAL BAG

waist. And it's just like a pair of diapers is what it is . . . made of material which obviously is non-permeable but still breathes and all it does is contain it. Now, to my knowledge, nobody's ever had to use that. But you wear it, because if you don't wear it, the consequences are rather drastic. Okay. So that sort of takes care of the in-the-suit situation.

Warshall: Then you would take off that bermuda short type thing when you got back into the spacecraft. . .

Schweickart: Yes, and you take off the transfer system, and if you'd used it, you transfer the urine into, well depending upon the policies on the particular mission, you either take a sample of it, for a scientific investigation, or you just dump it, one or the other.

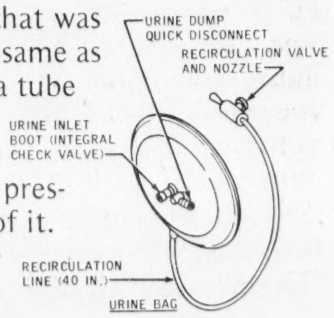
In terms of not in the suit, and in the spacecraft, again that's varied. In Apollo, for feces you just stuck a plastic bag on your butt, which was 6 inches in diameter, something like that, maybe a little bit less, 12 inches or so long and the mouth of it had a flange at the top with an adhesive on it, and you'd peel the coating off the adhesive and literally stick it to your butt. Hopefully centrally located. And if you think you know where your rear end is, you really find out, because you'd paste it on very carefully! So, you stick that to your butt, and then you go ahead and take a crap. But then the problem comes, because there's no particular reason whatsoever for the feces to separate from your rear end. So as a result, the problem is left as an exercise to the student to peel the bag off and make sure everything stays within the bag, and get all wiped off. It's basically a one hour procedure.

Warshall: For each time?

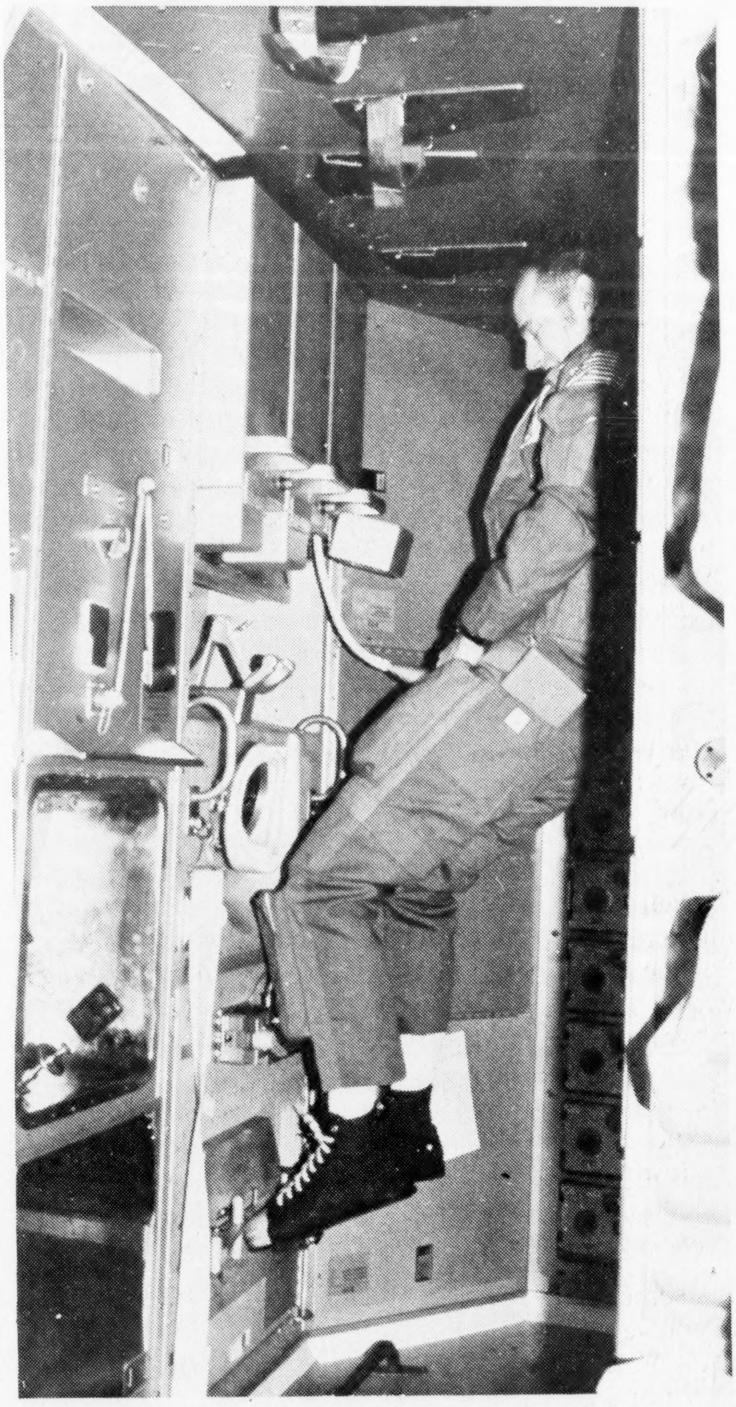
Schweickart: Yeah, from the time you start to peel down to stick the bag on and all that, till the time you have finished cleaning up and have everything wrapped up and stowed and have your clothes back on and everything, it's damn near an hour. And at times it's taken longer. Because when you peel that bag off, you try to take a handful of paper, and you know, lead the way in with that, but by the time you get done, you've got stuff spread all over your backsides, and if you're not careful, your clothes, and everything else.

Warshall: Have you ever had an accident where the stuff got out of the bag?

Schweickart: No, because generally speaking it's fairly sticky, so once it's in the bag it doesn't come out, but the problem is making sure it's loose of you when you get the bag off. It just is not a simple procedure, no matter what you do. Well, in any case, that was in Apollo.

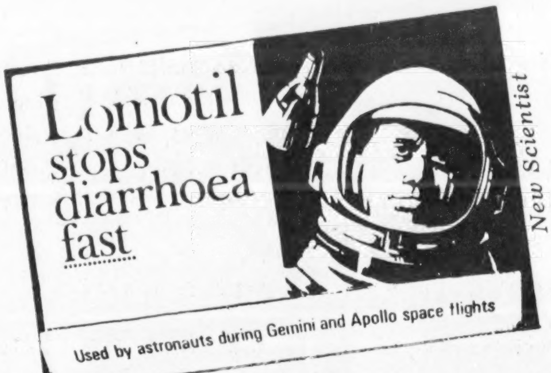

URINE DUMP QUICK DISCONNECT
RECIRCULATION VALVE AND NOZZLE
URINE INLET BOOT (INTEGRAL CHECK VALVE)
RECIRCULATION LINE (40 IN.)
URINE BAG

In terms of the urine system, that was simple in Apollo. It's just the same as a relief tube in airplanes. It's a tube with a funnel on the end that you urinate into. And at the other end of the tube is lower pressure than at the business end of it. So there's a differential pressure in the outward direction. Well, we did exactly the same thing, except you know on the other end of the hose you've got a vacuum instead of a couple of psi down or something. So you just basically urinate into a relief tube. There have been various designs so you can use a roll-on cuff to do it or you can just hang it out there in the air and do it. There are a couple of different variations, but basically you urinated directly overboard through a relief tube. And of course, you didn't lose much cabin air, because while the liquid is in the tube, in the hose, no air is going down. It's differential pressure carrying the liquid. So it's only a matter of designing it for the right flow rate.


Al Bean urinating in Skylab II. Just in front of his knee is the air-flushed fecal containment system, which you back up to. There's no particular "up" in this picture. The surface nearest Al's head was the floor when the spacecraft was launched. Note soap floating by sink.

Warshall: They couldn't do that for feces, some kind of vacuum system?

Schweickart: Well, actually, in Skylab we did something similar to that. But on Apollo the urine then would go outside, and you'd have to heat the nozzle

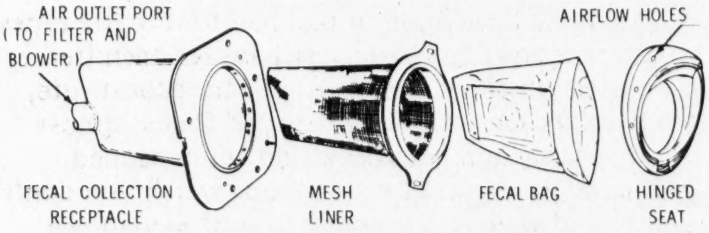

Lomotil
stops
diarrhoea
fast
Used by astronauts during Gemini and Apollo space flights

New Scientist

because, of course, it instantly flashes into ice crystals. And, in fact, I told Stewart this, the most beautiful sight in orbit, or one of the most beautiful sights, is a urine dump at sunset, because as the stuff comes out and as it hits the exit nozzle it instantly flashes into ten million little ice crystals which go out almost in a hemisphere, because, you know, you're exiting into essentially a perfect vacuum, and so the stuff goes in every direction, and all radially out from the spacecraft at relatively high velocity. It's surprising, and it's an incredible stream of . . . just a spray of sparklers almost. It's really a spectacular sight. At any rate that's the urine system on Apollo.

Now, when you come to Skylab, it's a little more sophisticated. We tried to get sophisticated before that, but it never really worked. But on Skylab, the problem was that the medical experiments required that we sample all the urine and return all the feces because we were trying to make a total metabolic analysis. We could no longer dump the urine overboard because we had to measure the volume and take samples. What we did was to substitute a fan for the vacuum, and again use basically the same design, that is use a relief tube type of thing, except that the differential pressure was supplied by a fan which would decrease the pressure inside a bladder. You would pool 24 hours worth of urine. Then, after 24 hours, once a day, every morning, you would measure the volume, shake it up, get it nice and homogeneous and then take a 10 ml. sample, seal it up and throw the rest down the trash airlock.

Warshall: So each man had his own relief tube?



FECAL COLLECTOR EXPLODED VIEW

Schweickart: So each man had his own relief tube and his own collection system, right. On feces, we got very clever. Again we designed a plastic bag, but in this case, one side of the bag – now let me think if I can remember the words there –

Warshall: Was it like a stopper or something?

Schweickart: Well, one side of the bag had a material on it which would pass gas but not liquid. Oh yeah, a hydrophylic filter. And that bag, which again was something like 12 inches long and say 6 or 8 inches in diameter, got pushed down into a receptacle, and the receptacle was made of screen, and you drew a differential pressure across the bag with a fan so that the air flow was out through one side of the bag and of course sucked cabin air in through the top of the bag. Okay? Now, there was a little seat that folded down over the top of the bag and then you sat on that little seat. Well, sat . . . you floated. In fact, you strapped yourself to the seat to make a fairly good seal there. Then what happened, as you sealed the open part of the seat with your rear end, there were side vents, circumferential vents, just under the seat, which allowed air to flow in from the side, and all of these little orifices – circumferential orifices – were directed at the exit point of your anus. So the air flow now, if you can picture it when the guy was sitting on it, the air flow would be in around the periphery of the seat, but all directed in little streams, like little jets, and then down through the bag and out the side of the bottom of the bag, see. So what happened then, is you ended up with air flow substituting for gravity. And it would cause the bolus, so-called, to separate from your anus. Then the air flow would carry it down into the major volume of the bag.

Warshall: Kind of floating it in air down there.

Schweickart: Yeah. You just use air and air flow to substitute for gravity, and that worked very well.

Warshall: Really?

Schweickart: Surprisingly. And as a result you were able to take care of a defecation with relative ease and a lot shorter time. So the system worked well. But then after you did that, you sort of stuff the bag with wiping paper, seal it, then weigh it to get the mass, the wet mass, and then put it into a vacuum oven to bake, and evacuating all the water. Then you'd stick it in the stack with all the other cow pies and bring them all home for analysis. So all you got rid of was the water. You keep all the solid material.

Warshall: So you just kept it in the same bag and . . .

Schweickart: Yeah, you kept it in the same bag, and in fact, the vacuum system, the vacuum drying system, used the same port through the side of the bag to get rid of the water vapor.

Warshall: So then you needed only one for the crew, you didn't need one for each person?

Schweickart: Right; only one toilet to collect the solids, but each person had his own relief tube for urine.

Warshall: That's incredible.

Schweickart: It's really wild. And you know, people say, "Why don't you fly women?" Well, Jesus, I'd hate to think about the plumbing. You know, it's really funny, because a lot of the girls at Purdue asked that, "When are you going to take women in the program?" and I always throw that one out, the part about the plumbing requirement. We haven't had the proper plumbing in the past. Well, the fact of the matter is, we're designing it into shuttle. I don't know what it looks like, I haven't looked at any of the detailed design from Washington here, so I don't know what it looks like, but we are ready for women on this one.

Warshall: A lot of people were wondering what happens when you start dumping things into space. Like, what happens to the . . . do you use toilet paper, for instance?

Schweickart: Well, the only thing that gets dumped into space is the urine, and that no longer is dumped into space, or at least was not dumped during Skylab, but that was during the early, Mercury, Gemini and Apollo. The fecal matter has always been stored on board.

Warshall: Oh, I see. People have visions of fecal matter and urine ruining space.

Schweickart: No, no. The only thing that is left floating around out there is principally water which instantly flashes into ice crystals and then subsequently under the influence of solar radiation, sublimates and ends up in a purely gaseous state and my guess is then, I would suspect, I'm not sure the interaction of sunlight on the gases at that altitude, but they either decay down to the lower atmosphere, or they get blown off. I'm not sure which.

Warshall: So somewhere out in space is just some sublimated water crystals floating around.

Schweickart: Yeah.

Warshall: Well you can see what they were worried about. Some day the sun's rays . . . blocked out by . . .

Schweickart: It's all stored aboard, so they don't have to worry about it.

Warshall: Do you use any kind of special toilet paper?

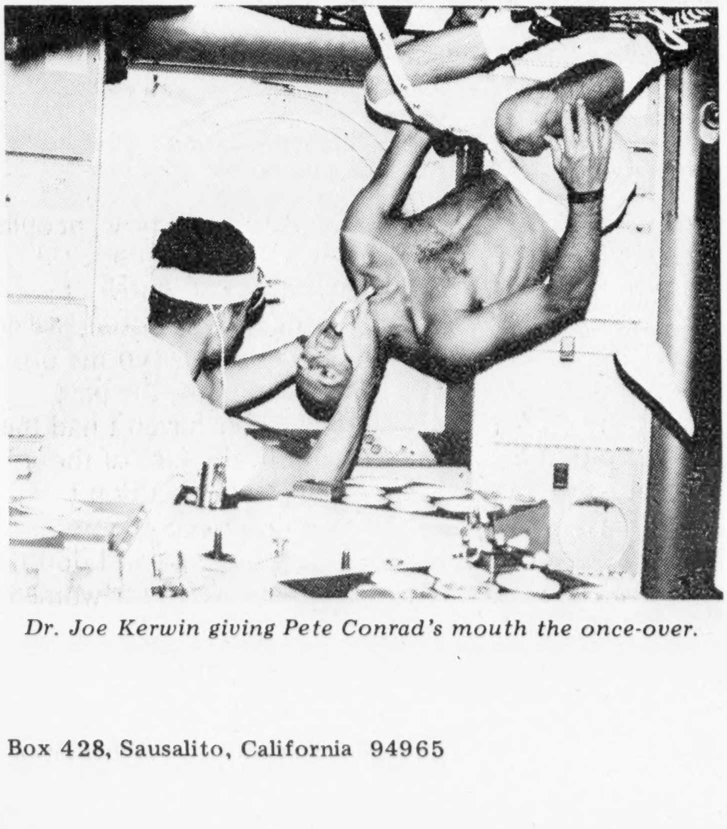
Schweickart: No, not that I know of. There may be some flame retardant chemicals put into it just so you don't have any unnecessary flammable materials around, but I'm not sure whether that's the case or not.

Warshall: So it's just like any other toilet paper.

Schweickart: It's basically like any other toilet paper.

Warshall: Is it stuck in the bag and then burned, or . . .?

Schweickart: No, it is in the same bag with the fecal material, and in the early missions that was a plastic bag that you mixed in a disinfectant or actually an anti-gas, oh, what's the word I want, I guess disinfectant would be the best word, which holds down the generation of gas, and you mix that disinfectant liquid all through the fecal material. You mix it in, seal the plastic bag.



Dr. Joe Kerwin giving Pete Conrad's mouth the once-over.

Warshall: How do you get it in there?

Schweickart: Well, it's in a small, like a ketchup, a little plastic container like you find ketchup in in restaurants, in a cafeteria or something, it's like that. You tear the slit across the top, being careful not to squeeze it so the stuff comes out, and then you drop that into the fecal container, and then seal the fecal container. Then you squeeze it through the, you know, externally, you know, which forces it out of the container, and then you mix it by massaging the fecal bag. It's really fun when it's still warm.

Warshall: The other thing that I've been asked about is how your diet affects everything; what you're actually eating; how that actually affects, you know, going to the bathroom, and do you do it once a day, since you said it took about an hour when you had . . .

Schweickart: Well, it's not at all clear how or whether the food really has any effect different from what you experience down here. The food does, I'm sure, have different preservatives and that kind of thing in it in order to be able to take it up there in the first place and be able to store it for long periods of time and that sort of thing. But I don't think there was any consistent observation, and there's no way to separate the effect of the weightless environment or other changes, physiological changes that are going on from the effect of the food.

Warshall: I mean, the image people have is you're mostly eating out of kind of toothpaste tubes or the food is being squeezed out, or something like that.

Schweickart: That's a pretty long conversation to try and get into, there are all different types, but the toothpaste-type tube has never been used in space. Well, it was used in early Mercury as a kind of test thing, but we have never in fact had toothpaste types of pastes or anything like it. It's always been freeze-dried food which you add water to to reconstitute, or what are called thermal-stabilized foods, almost exactly the same thing you would get in canned peaches or pears, that type of foods which you don't need to add water to, or in the case of Skylab, we also had about 10-15% of frozen foods, including filet mignon, and lobster and roast pork and vanilla ice cream for that matter.

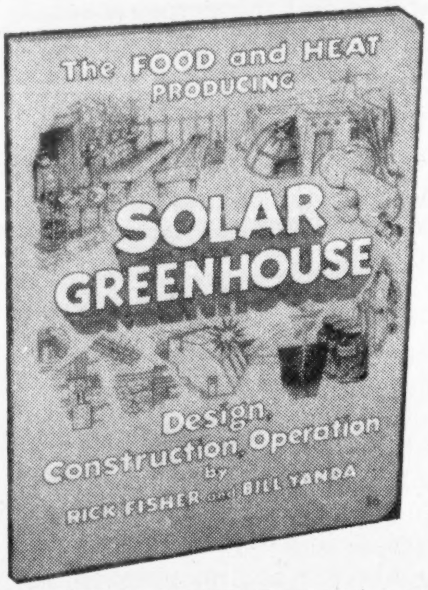
Warshall: And you don't have to worry about that floating out into the space lab?

Schweickart: Well, if I could show you the movies, you'd see how we handle it. In some cases, like the filet for example, you cut a piece, and as you're taking it off of the fork the main piece of the filet may be floating up out of the plate, but you stab it with your fork and put it back down in, and if you do it carefully, the surface tension of the gravy will keep it in place. ■

The Food and Heat Producing Solar Greenhouse

In the short time this book has been available, it has become the one where you look first. For good reason too — somebody or other has actually done what's shown, and there's a lot shown. More than shown, really, because there's also lots of how and why too. And a good bibliography with comment. And good photographs of proven details. And step-by-step instruction on both building and operating. In fact, the book is a marvel. Lots of love in it.

—J. Baldwin

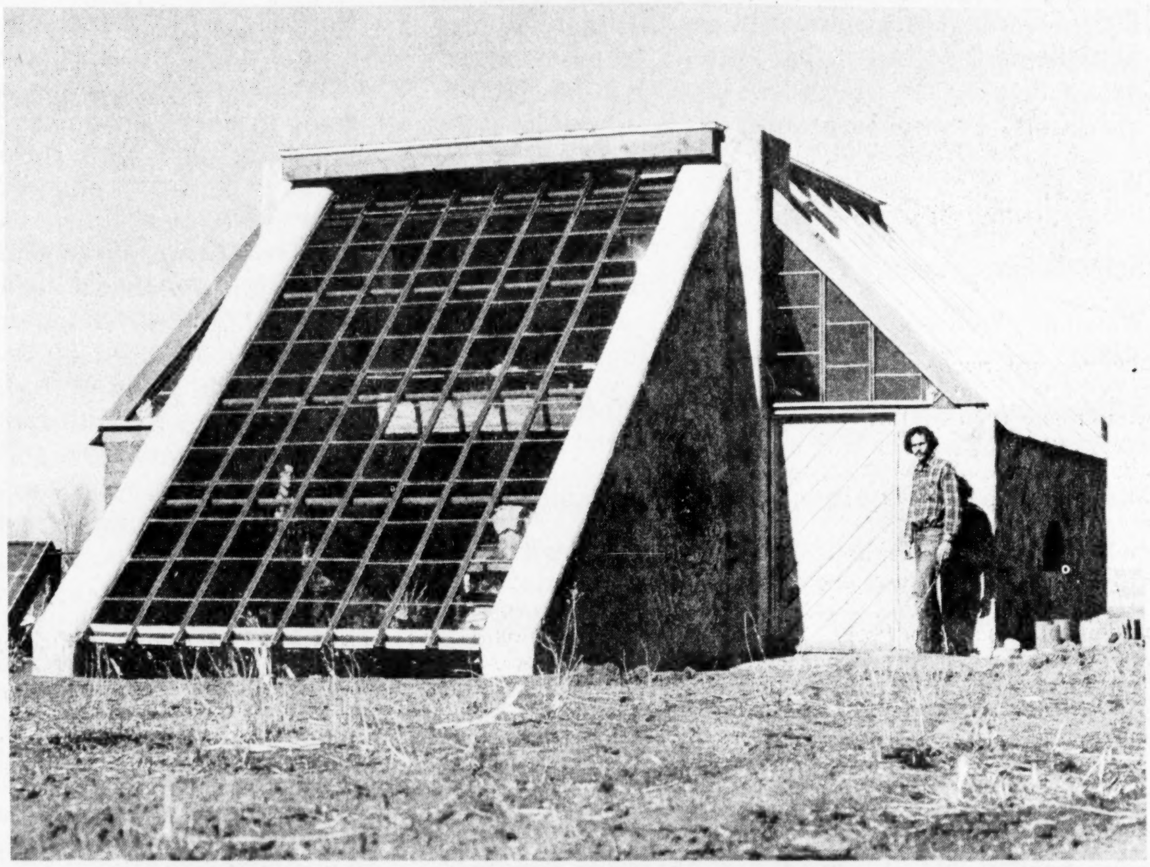

The FOOD and HEAT PRODUCING
SOLAR GREENHOUSE
Design, Construction, Operation
by
RICK FISHER and BILL YANDA

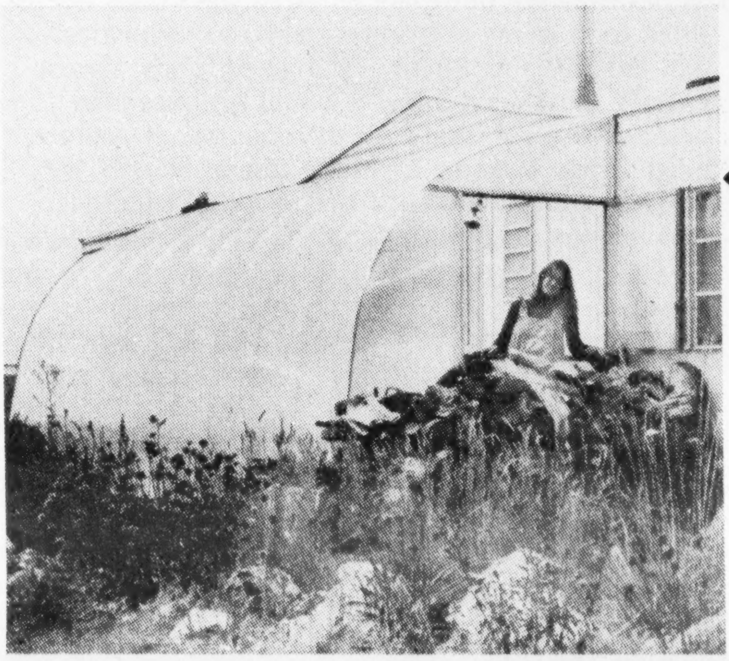
The Food and Heat Producing Solar Greenhouse
(Design, Construction, operation)
Rick Fisher and
Bill Yanda
1976; 161 pp.
$6.50 postpaid

from:
John Muir Publications
P.O. Box 613
Santa Fe, NM 87501
or Whole Earth

The Otwell's greenhouse/home combination had an average low of 55 degrees and an average high of 75 degrees during the first winter in use. Corresponding outdoor temperatures were 10 degrees and 50 degrees respectively.

So there they sit, Katherine and Bill Otwell, in a beautiful low-cost completely passive solar home in the Arizona desert. They're eating fresh vegetables from their greenhouse when it's below freezing outdoors, burning a minimum of wood in very cold weather, designing other low-cost solar homes, and defying the notion that such dwellings don't exist yet. For further information write to: William Otwell, Arizona Sunworks, Star Route, Chino Valley, Arizona 86323.





Dr. Voute has developed a rather intense personal relationship to his unit. To paraphrase him: "The damn thing's like a spoiled pet or child; it needs attention all the time. I think we'll skip December and January growing next year and take a vacation from it." This is said lovingly, believe it or not.

•

The inflatable polygreenhouse, naturally, doesn't have the durability of a rigid fiberglass or glass house. However, it definitely has an initial cost edge over any similarly sized pre-fab solar collector. If the owner takes good care of the material and stores it in the summer it might go as long as five heating seasons before replacement of the inexpensive polyethylene. That's far beyond the pay-off period. As a matter of fact, in some applications like mobile homes (see photo), the Solar Room could pay itself off in one heating period. (That's ignoring the food production capabilities of the unit.) Any home owner getting hit for $150 to $200 a month heating bills (common in many areas) should certainly investigate this system.

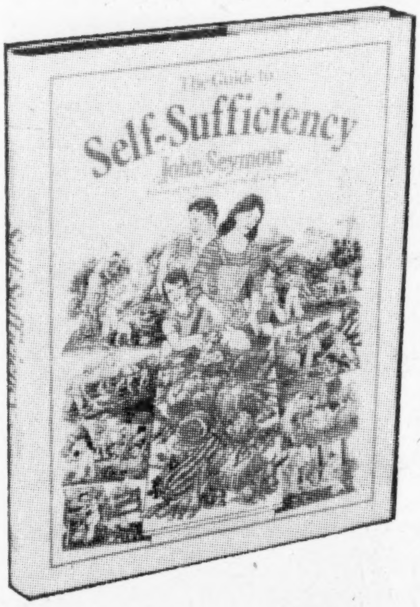
Besides the inflatable Solar Room, the company is also developing water heaters and thermally designed window box greenhouses.

Write them for more information at Box 1377, Taos, New Mexico 87571.

The Guide to Self-Sufficiency

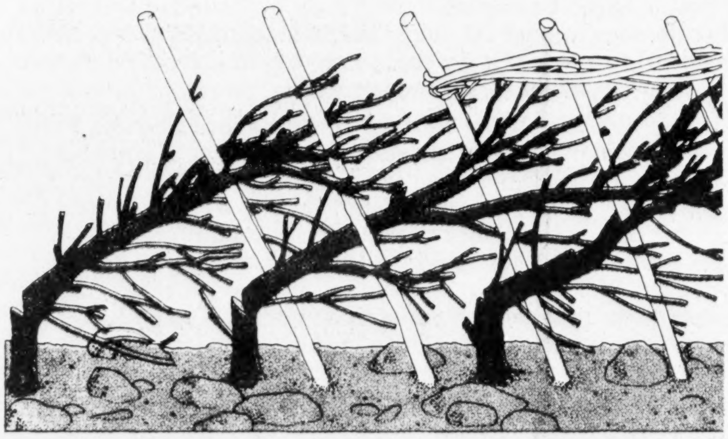
John Seymour has expanded his **Farming for Self-Sufficiency** *(1973) (EPILOG, p. 494) into a full-blown how-to manual. His vast personal experience and wry wit are now interspersed with excellent illustrations covering more farm chores than you'll probably have time for — from ploughing, slaughtering pigs and snaring hares to making cheese, beer and chutney. The techniques are traditional, small-scale, and* labor-*intensive.*

—Richard Nilsen



The Guide to Self-Sufficiency
John Seymour
1976; 251 pp.
$11.95 postpaid
from:
Popular Mechanics Books
Hearst Books
P.O. Box 2319
F.D.R. Station
New York, NY 10022
or Whole Earth

Man was not *meant* to be a one-job animal. We do not thrive as parts of a machine. We are intended by nature to be diverse, to do many things, to have several skills. The city person who buys a sack of wheat from a farmer on a visit to the countryside and grinds his own flour to make his own bread cuts out a lot of middle men and gets much better bread. He gets good exercise turning the handle of the grinding machine too. And any suburban gardener can dig up some of that useless lawn and put some of those dreary hardy perennials on the compost heap and grow his own cabbages. A good sized suburban garden can practically keep a family. I knew a woman who grew the finest outdoor tomatoes I ever saw in a window-box twelve floors up in an apartment building. They were too high up to get the blight.



Building or repairing a hedge
Cut stakes out of your hedge so as to leave strong bushes at intervals of about a foot. Wear a leather hedging glove on your left hand. Bend each trunk over and half-cut through it near the base with a bill-hook.

Force the half-cut trunk down to nearly horizontal and try to push the end under its neighbor so as to hold it in position. Be sure not to break it off. Take the stakes you have just cut and drive them in roughly at right angles to, and interwoven with the trunks. Weave tops of stakes together with some pliable growth such as hazel or willow. By the time the stakes have rotted the living hedge will be secure.

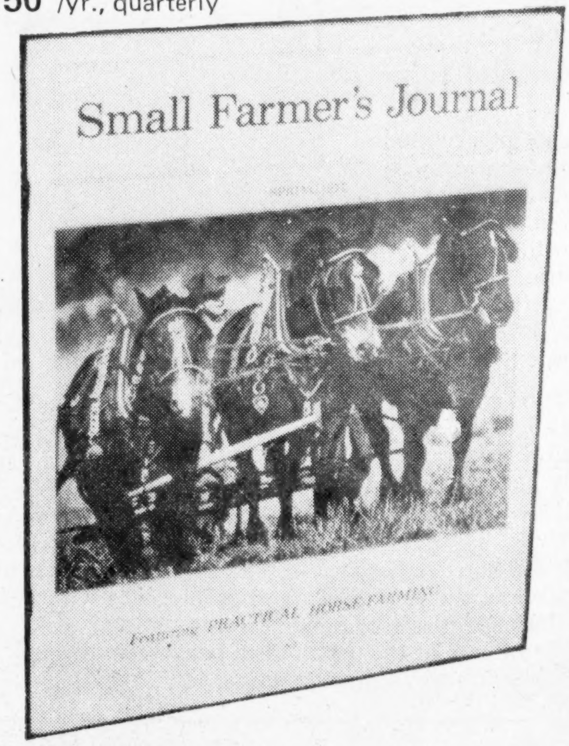
Small Farmer's Journal

A new quarterly for those who are serious about farming on a small scale. The editor, Lynn R. Miller, farms 80 acres with Belgium draft horses. The slant features "practical horse farming," and other solid information that can be put to use. The first issue contains some extensive re-prints from turn-of-the-century publication covering orchard care, planning a crop system, hedges as fencing; plus up-to-date articles and interviews with experienced and beginning farmers. This is a periodical that you'll want to keep as part of an on-going reference library.

—Drew Langsner

Small Farmer's Journal
Lynn R. Miller, Editor
$3.00 /issue
$8.50 /yr., quarterly

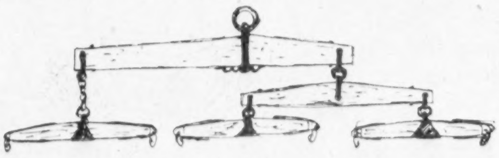
from:
Small Farmer's Journal
P.O. Box 197
Junction City, OR 97448



It requires on the average, 4 acres to feed a horse. You can operate a quarter-section farm, efficiently, with 6 horses.

•

The Illinois Experiment Station, Bulletin 444, page 585, says: "Horse and tractor farms had about same total costs for labor, horses, and machinery. Among fifty-seven farms included in the ten-year study, only six were operated with horses alone during all ten years. In *total* costs for labor, horses, and machinery, there was no appreciable difference between these six farms and six others of same size which had tractors on them all ten years. There was, however, a marked difference in *amounts paid out in cash* during the ten years. On farms operated exclusively with horses an average of only $1,190 per farm was spent for horses and machinery; whereas on farms where tractors were used an average of $2,850 was spent per farm for these items. The difference in total cash outlay thus amounted to $1,660 per farm in ten years."



In some cases, with three horses abreast, two are hooked as though a team to a double-tree which is in turn fastened to a three-horse evener. The third horse's single-tree is then fastened with a short chain (or two long clevises) to the end of the evener. The center of draft on the three-horse evener is then offset, allowing for the greater leverage of the two horses over the one. The purpose of this type of hitch over the straight triple-tree is that it can be used with horses or mules of uneven strength and/or size. The strongest (or weakest) animal can be hooked to the end of the evener, with the weaker two (or stronger two) working as a team on the other end.

Agriculture in the City

Technique-wise this is the simplest and best community gardening manual to date. It's an after-the-fact description of a single-site gardening program in Santa Barbara. The methods they evolved for composting and transplanting are just what urban gardeners are looking for. They added bees and chickens, taught gardening classes, and discovered you'd need a major livestock operation to support a methane digester — all typical experiences in community gardening. Their account is so personal it's universal.

—Rosemary Menninger

Agriculture in the City
El Mirasol Educational Farm
1976; 74 pp.

$2.75 postpaid

from:
Community Environmental Council
109 E. De La Guerra St.
Santa Barbara, CA 93101

AGRICULTURE IN THE CITY

VEGETABLE STAND. No one can resist a bargain, and fresh-picked, inexpensive, organic vegetables that we sold on our vegetable stand were enough to lure many people off the street who might never have otherwise visited the farm. In addition to the vegetables were the fresh-cut flowers which were very popular. Perhaps more than any other aspect of El Mirasol Farm, the vegetable stand developed a regular clientele, almost entirely of neighborhood people, who became proponents of the urban farm because they were able to experience it in a most practical way.

Tools for Agriculture

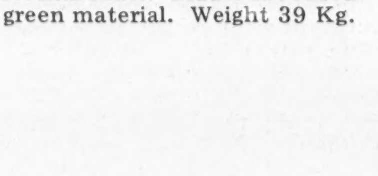
This catalog of farming tools is aimed at developing countries. It includes some animal-drawn field equipment and a variety of hand and power threshers, winnowers and water pumps, (but most of these must be ordered from Europe, India or Africa and no prices are quoted in the catalog). The biggest section by far is their listing of chemical sprayers — nearly 100 of them. Nevertheless, the pictures of all the tools are pretty good, and it might be a useful reference book to take along to a farm auction.

—Rosemary Menninger

Tools for Agriculture
(A Buyers Guide to Low-Cost Agricultural Implements)
John Boyd
1973, 1976; 165 pp.

$12.50 postpaid

from:
International Scholarly Book Services, Inc.
P.O. Box 555
Forest Grove, OR 97116



Green Manure Trampler

Growing a green manure crop and burying it in the soil is a way of adding to the organic matter content of the soil. This implement is useful for trampling green leaves and stalks. It consists of four 250 mm (10") diameter steel discs with cast iron hubs mounted on a horizontal shaft. Blades mounted on the shaft help to cut the green material. Weight 39 Kg.

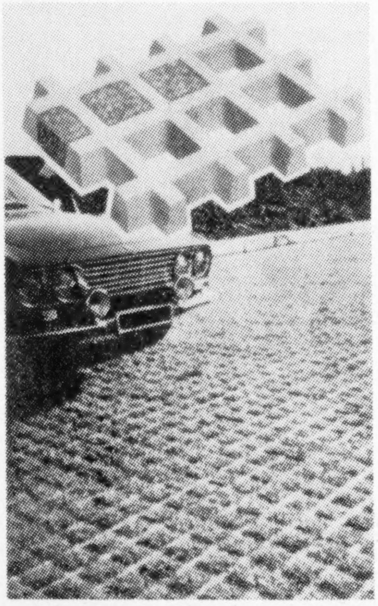
Cossul & Co. Pvt. Ltd.
Industrial Area
Fazalgunj
Kanpur
India

Porous paving blocks

Providing hard surface paving yet still allowing natural water percolation to the soil below seems to be an impossible task. Yet porous paving blocks do just that. The porous paving at our office has been in use for three years now with no settling or water runoff headaches. Commercially, it's an expensive process to install, sometimes 6 times the cost of the typical bituminous asphalt, largely due to lots of labor. The technique is well adapted to cottage industry and do-it-yourself, so for many the costs could be slashed.

—David Deppen

Porous Paving Blocks
Information from:
Boiardi Products Corp.
211 East 43rd Street
New York, NY 10017
or
Hastings Pavement Co., Inc.
410 Lakeville Road
Lake Success, NY 11040



Organic Gardening & Farming Index

Dear Rosemary,

Someone has finally put together an index to help you find and use the gardening and related information to be found in **Organic Gardening and Farming** magazine. The someone who did the long, hard, laborious job is actually two someones: Steve and Barbara Dinkowitz (9778 Lower River Road, Grants Pass, Oregon 97526). Their index for 1975 contains "2,112 subject entries listed alphabetically and cross-referenced, with the month and page where each subject can be found." It also contains a list of recipes and books, plus organizations and publications of interest.

So when we wanted to know how to make and use diastatic malt in bread baking we looked it up in the index and found a reference to page 99, Sept. 1975, which told us what we needed to know. Or we could have found it cross referenced under "Breadmaking, with malt."

If you have five years worth of **Organic Gardening and Farming** stacked up in your bookcase like we do or if you have just started gardening, you can put the **1975 OGF Index** to good use. I don't know why someone (like Rodale Press) didn't put together such a useful tool a long time ago — probably because there was so darn much work involved. For the Dinkowitzes it was a labor of love. However, they would like to make some money at it also. The $1.95 price per index is reasonable. Their **1976 OGF Index** is also available now as well as their **1974 OGF Index** — each at the price of $1.95 plus $ .25 for 1st class postage on each index. Or you can order all three for $4.95 plus 50 cents postage.

The folks who compiled these indexes say in their introduction, "Your garden is a prayer, a mantra to the preservation of life; of magic. A place where the work is being done: where Earth is being healed." I think these indexes will help us help the garden do its healing work.

Sincerely,

Gary Lisman
Jacksonville, Oregon

Maybe the Dinkowitzes, or someone, would like to do a **CoEvolution Quarterly** *index.*

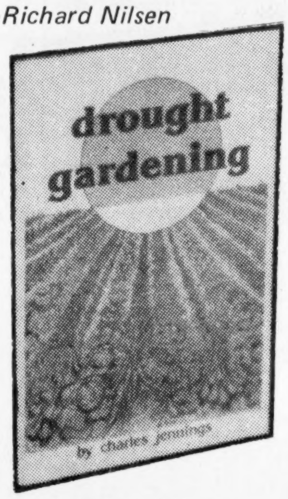
—SB

Drought Gardening

A vegetable garden to beat the high cost of this summer's produce could easily back-fire for those of us living with rationed water. The sliding penalty scales for excessive water use could quickly make your home grown tomatoes far more expensive than any you could buy in a store. With these kinds of economic penalties, a vegetable garden is either water efficient, or it doesn't happen. (And all of this while we watch sizeable chunks of Kentucky float away on the evening news.) Charles Jennings' booklet presents tips on coping with scant water, as well as an over-all strategy for scaling down your garden to fit into a dry time.

—Richard Nilsen

Drought Gardening
Charles Jennings
1977; 48pp.
$3.00 postpaid
from:
Charles Jennings
21625 SE Hwy 212
Boring, OR 97009



Droughts are a bit like the diamond-backed rattlesnakes — we are dazzled by their beauty until we feel their bite. The days of a drought are often beautiful, clear and sunny, and in its early stages a drought may seem like extremely good fortune.

●

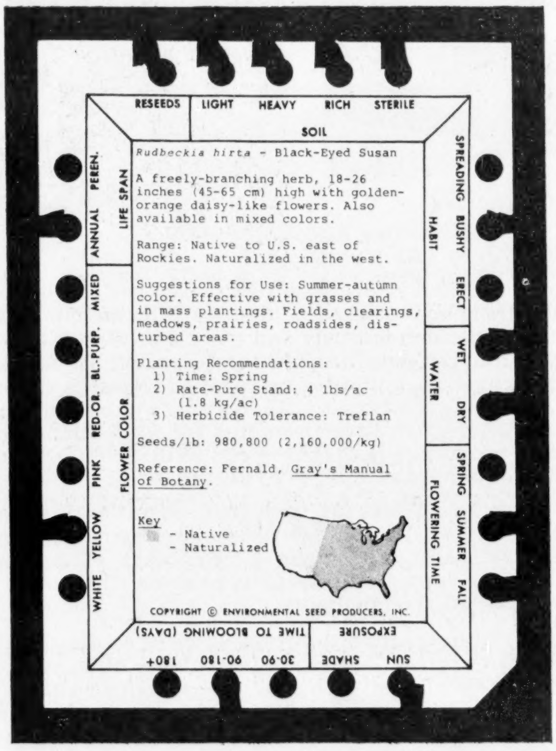
An old-time water conservation technique which deserves to be revived is that of the rain barrel. We have one placed so as to catch all the rainwater runoff from one side of our house, yet still be within twenty feet of our garden. I often add dry animal manure to the barrel to make "compost tea." When bucketed out to the garden, this makes an excellent liquid fertilizer for young seedlings. If you are concerned about the rain barrel providing a breeding ground for mosquitos, simply add a few drops of some organic oil (linseed works well) to the surface of the water from time to time. The oil disperses over the entire surface of the water, creating a microscopic film which strongly inhibits mosquito breathing.

Environmental Seed Producers

Here is a unique wildflower seed "catalog," actually a stack of 46 file cards in a zip-open plastic pouch. Each card duplicates the seed packet, with color photo on one side, full info on the back. E.S.P. answers the question we asked last issue: "How can seed packets be more informative?" By combining short sentences and a hole-punch coding system, E.S.P. gives the plant's basic statistics, health requirements, planting recommendations with bibliographic reference, and a map of the U.S. showing plant's native territory and scope of cultivation. Makes me want to buy their seed.

—Rosemary Menninger
[Suggested by Cindy Gautier]

Environmental Seed Producers Seed Cards
$5.00 postpaid
Price list is free, seeds sold in bulk quantities only. Minimum order 1 lb., ranging from $5.00 to $100.00 depending on seed.
from:
Environmental Seed Producers, Inc.
P.O. Box 5904
El Monte, CA 91734


RESEEDS
LIGHT
HEAVY
RICH
STERILE
SOIL
SPREADING
BUSHY
ERECT
HABIT
WET
DRY
WATER
SPRING
SUMMER
FALL
FLOWERING TIME
EXPOSURE
SUN
SHADE
TIME TO BLOOMING (DAYS)
30-90
90-180
180+
LIFE SPAN
ANNUAL
PEREN.
FLOWER COLOR
MIXED
BL.-PURP.
RED-OR.
PINK
YELLOW
WHITE

Rudbeckia hirta - Black-Eyed Susan

A freely-branching herb, 18-26 inches (45-65 cm) high with golden-orange daisy-like flowers. Also available in mixed colors.

Range: Native to U.S. east of Rockies. Naturalized in the west.

Suggestions for Use: Summer-autumn color. Effective with grasses and in mass plantings. Fields, clearings, meadows, prairies, roadsides, disturbed areas.

Planting Recommendations:
1) Time: Spring
2) Rate-Pure Stand: 4 lbs/ac (1.8 kg/ac)
3) Herbicide Tolerance: Treflan

Seeds/lb: 980,800 (2,160,000/kg)

Reference: Fernald, Gray's Manual of Botany.

Key
▨ - Native
- Naturalized

COPYRIGHT © ENVIRONMENTAL SEED PRODUCERS, INC.

Johnny's Selected Seeds

I discovered "Johnny," actually Rob Johnston, while looking for seasonal work. He didn't have any of that but he did have a cantaloupe which he gave me instead of a job. That cantaloupe was memorable for its flavor, among, if not the best, I'd ever eaten; it was even more remarkable for having been grown in Maine and harvested in September. Rob said he'd had better in the middle of August — and this had been a cool summer!

I was so taken by the fruit — cantaloupe are among the most difficult things to grow up here — that I assumed the rest of his selection must be excellent and returned for more information and catalogues. When I complimented him on his melon he asked me if I had saved the seeds since they probably would have grown more excellent melons and I could have had them for free. His question illustrates one of the unique features of this seed peddling operation: besides selling only organically grown and untreated seeds, it encourages you to save your own seeds. They feel seeds you save are better than those you buy because they will come from plants adapting themselves to your garden and your needs.

Rob is even planning to publish a booklet telling people how to save their own seed. (Tomatoes, cantaloupes and some other pulpy vegetable seeds need to be fermented in the pulp a few days before drying if they are going to germinate.) The booklet will obviously place some limits on his business. If all his customers were to follow his advice he would be reduced to a communications center for information about new varieties developed by his customers and others and an original source for new gardeners. It should happen to Burpee.

—Clyde Wendell Donovan-Smith
Roxbury, Massachusetts

Johnny's Selected Seeds
(Organic Seed &
Crop Research)
Catalog
$ .50
from:
Johnny's Selected Seeds
Albion, ME 04910

Carrots
After several sessions of measuring and taste-testing over 60 carrot varieties in our plots, we were able to discern three rather distinct "groups": 1) the early coloring, small rooted types which flavor up quickly; 2) the medium-sized carrots which are second-early in coloring-flavoring, retain good eating quality throughout the season, and may be winter stored; and 3) the late group, which grows very large and is best used as fall and winter carrots, harvested after frost. Please enjoy the following varities which we offer in full confidence. PACKET: 4 gms (3000 seeds), 70 cents.

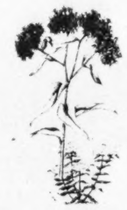
Low Maintenance Perennials

I can't keep this book in my hands; everyone who sees it wants to borrow it. A discussion of several hundred hardy flowers and ornamental grasses, many of them drought-resistant. Their cultivation is primarily a head-trip: first studying the requirements of the plants and the conditions of the garden; then matching a plant to a suitable spot. If the plant is well-situated, nature will do the gardening. The illustrations are good and the suggested designs for trellises and staking are superb.

—Rosemary Menninger

Low Maintenance Perennials
Robert S. Hebb

Low Maintenance Perennials
Robert S. Hebb
1975; 216 pp.
$4.95 postpaid
from:
Quadrangle/New York Times Book Co.
10 E. 53rd Street
New York, NY 10022
or Whole Earth



Asclepias tuberosa

Butterfly Weed, Pleurisy Root
Milkweed Family (Asclepiadaceae)

This should be tried in every garden where the soil is poor or sandy and dry, particularly if a place in full sun can be given. This native American is hardy and showy in flower, has a long life, will never outgrow its allotted space, has no insect or disease problems, and once established requires almost no attention. This is the type of description we immediately suspect as "phony" in advertisements for some plants, but if you do not encourage Butterfly Weed with a rich or moist soil, excellent results should be expected.

It grows from 2 to 3 feet tall with hairy stems and leaves which are pointed. The orange flowers in midsummer are borne in umbels and last for about two weeks. They are followed by the typical Milkweed-type pods which are attractive in dried arrangements.

Butterfly Weed develops a tap root, so once established it is very difficult to move. Young potted plants obtained from nurseries may be planted either in the spring or autumn. They are slow to start in the spring so careful cultivation will be necessary until the new growths appear; division is not recommended.

Centaur Forge

They are the most complete mail order outlet for supplies that I have come across in 4 years. Their prices are very reasonable and they carry every thing from anvils to oakum to linament and forges.

I personally recommend "Diamond" tools for shoeing most horses. Although G.E. are probably the best they are considerably more expensive. "Enderes" tools are generally cheaper than Diamond but of substantially poorer quality and poor design. I also recommend Diamond shoes and Izumi nails (they have a star on the head.) Around the valley here (Salt River Valley, AZ.) we have a real problem with dryness in hooves and in spite of all the commercial hoof dressings on the market I have found common ordinary bacon grease or lard to work as well as or better than other remedies.

—Dennis Moroney

Centaur Forge, Ltd.
117 North Spring Street
P.O. Box 239
Burlington, WI 53105

MULESKIN APRONS

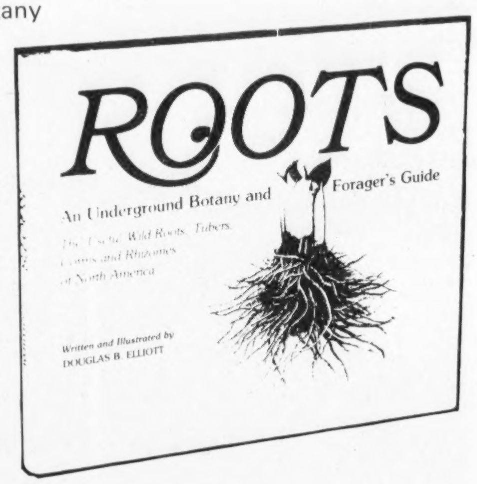
Chap type — Michigan Style	$26.00
Regular tie type	16.00
Extra Extra Heavy (pictured)	23.00
Chap type — Kansas Style	25.00

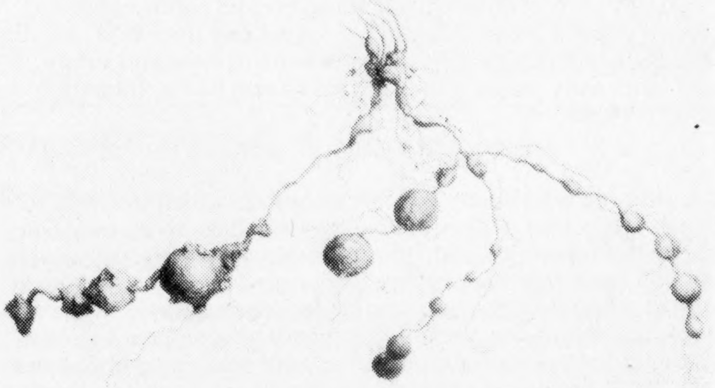
Roots

A paperback coffeetable book on roots with exquisite drawings of the underground; but there's more to roots than meets the eye. Chicory and rhubarb, for instance, plummet twenty feet or more, taking earthworms down with them to deep-cultivate hard soil. I've only heard about deep-root cultivation by word of mouth, and no data on it appears here; but Roots *is an aesthetic introduction to what may soon become the popular science of root-culture.*

—Rosemary Menninger

Roots
(An Underground Botany and Forager's Guide)
Douglas B. Elliott
1976; 123 pp.
$5.95 postpaid
from:
The Chatham Press
Old Greenwich, CT 06870
or Whole Earth


ROOTS
An Underground Botany and Forager's Guide
The Useful Wild Roots, Tubers, Corms and Rhizomes of North America
Written and Illustrated by
DOUGLAS B. ELLIOTT



Groundnut is a vine which can be found spreading over the ground or climbing over bushes to a height of several feet. The compound leaves have five to nine leaflets. In late summer the blossoms spring forth in clusters on spike-like racemes from the junction of the leaf stalks and the stem. The flowers are brownish purple, very fragrant, and shaped like a bean blossom. In autumn the blossoms form slender, bean-like pods.

Groundnuts were a staple food of the American Indians. Both pilgrims and early colonists often subsisted on them.

The great botanist, Asa Gray, once said that if advanced civilization had started in North America instead of the Old World, the Groundnut would have been the first tuber to be developed and cultivated. Actually, they were taken to France to be cultivated as early as 1635 but were soon forgotten, probably because the roots take two or three years to reach eating size. In Captain John Smith's **Narratives of Early Virginia**, he tells of "Groundnuts as big as Egges and as good as Potatoes, and 40 on a string not two inches underground."

I have never found them quite like Smith described, but then again, he got there first. . . .

Groundnuts can be eaten raw or boiled, but I like them best sliced thin with the skin on and gently fried in a little oil with a bit of wild onion or garlic added for additional flavor. They are a relative of the soybean and are reported to contain 25 percent protein.

Apios americana

Leguminosae, Pea family

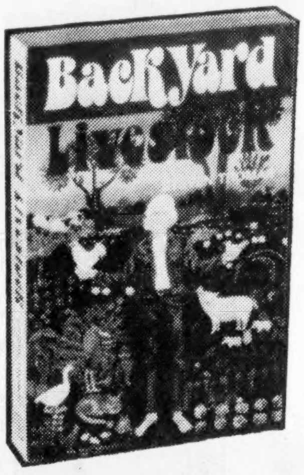
OTHER COMMON NAMES:
Indian-potato, Ground-potato, Potato-pea, Pig-potato, White Apple, Traveler's Delight, Wild Bean, Bog Potato.

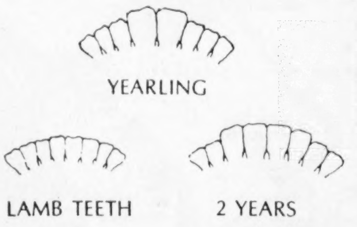
Backyard Livestock

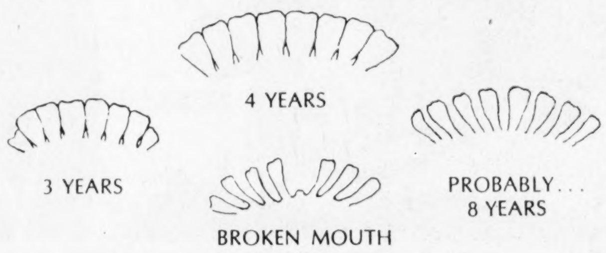
Backyard in this sense does not mean city. At least, this book does not deal with zoning ordinances or soundproofing chickens. It's similar to Rodale's recent classic Raising Small Livestock *but is better streamlined for beginners. In fact, what orients the book to homes as well as homesteads is its simplicity. Even backyard veal now seems feasible.*

—Rosemary Menninger

Backyard Livestock
Steven Thomas
1976; 288 pp.
$5.95 postpaid
from:
The Countryman Press
Taftsville, VT 05073
or Whole Earth







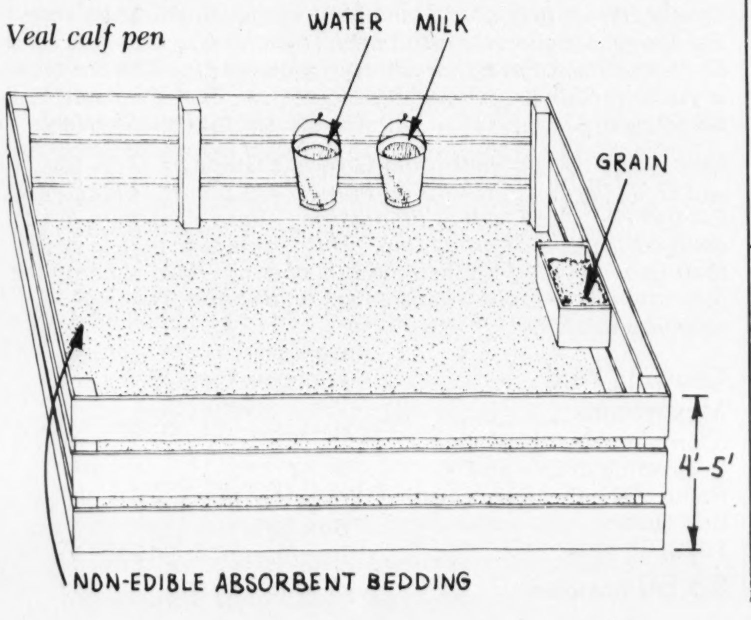
Age determination by stage of teeth development.

Approximate Time Per Day To Care For Livestock

Animal	Time/Day (Minutes) Summer	Winter
Poultry	5	7
Sheep	5*	10
Milk Goat	15-30	15-30
Pig	5	7
Rabbit	5	7
Veal Calf	7	10

*If you raise grass lambs that are contained by fencing you will have practically no time investment (except to check for their general well-being) other than to bring water. If you grain them in the summer figure an additional few minutes.

Veal calf pen

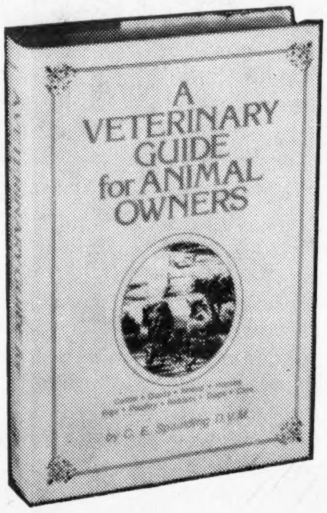


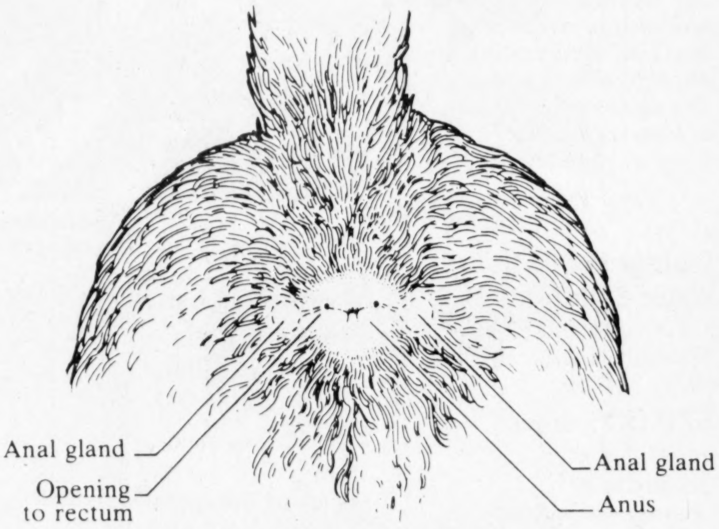
A Veterinary Guide for Animal Owners

Rodale's new vet guide is up to but does not surpass Veterinary Guide for Farmers *(CATALOG, p. 65) covering large and small livestock and pets. The chapter on dogs is more thorough than the entirety of a new dog medical manual we received here recently. Still, there's a tendency to refer you to a vet to learn basic medical techniques. Spaulding is the vet columnist for the excellent magazine* Countryside *(CATALOG, p. 45).*

—Rosemary Menninger

A Veterinary Guide for Animal Owners
(Cattle, Goats, Sheep, Horses, Pigs, Poultry, Rabbits, Dogs, Cats)
C.E. Spaulding, D.V.M.
1976; 404 pp.
$9.95 postpaid
from:
Rodale Press
33 East Minor
Emmaus, PA 18049
or Whole Earth





ANAL GLAND IMPACTION AND INFECTION

On either side of the rectum the dog has a small gland which serves mainly as a scent gland. These glands empty into the rectum during a bowel movement or at times of fright. The opening into the rectum sometimes becomes plugged with fecal material and does not allow the gland to empty. Thus, the gland fills and can become infected. A dog with a full anal gland will drag its rear end on the ground or carpet in an attempt to squeeze this accumulation out of the gland. People used to think this meant the dog had worms, and some still think so. DOGS DO NOT HAVE PINWORMS. Worming a dog with infected anal glands can be dangerous, for many times constipation goes along with the condition, and if the dog cannot get rid of the wormer, it may make it sick or even kill it.

Finding the Merck Veterinary Manual

Since its listing in the Whole Earth Epilog *(p. 581), we've received letters that this Merck Manual is no longer for sale to the public, only to vets. A friend of mine tells me, however, that it is available for browsing at most rural feed stores. You can look up the drug your animal needs, then buy it straight from a friendly vet with no service charge. Some medications can be purchased at the feed store.*

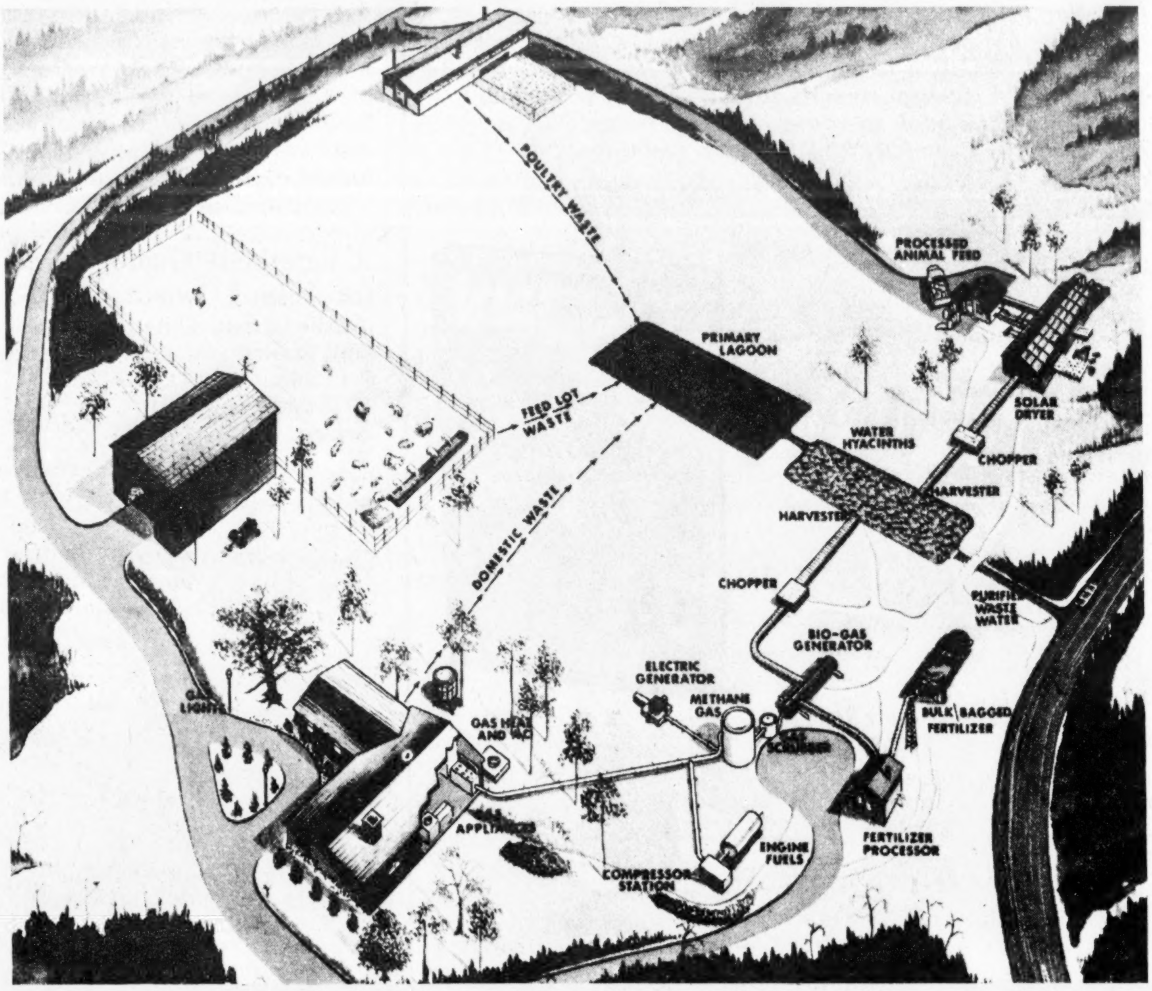
—Rosemary Menninger
[Suggested by Pete Williams]

Biological Control of Water Pollution

Clean Water *(EPILOG, p. 488) is still the best introduction to using living filters (soils, plants and microbes) to treat sewage and toxic chemicals. The miraculous filtering and cleansing powers of soils are just hitting the USA which, until the 70s, was obsessed by hi-tech sewage treatment. In addition, the not-so-new idea of using our wastes to grow crops, fibers and even fish is just meandering its way into the cloisters of academia.*

Here are two technical and up-to-date collections of essays. Biological Control *emphasizes cleaning polluted water by creating habitats in which animals and plants can do the job for humans.* Wastewater Use *emphasizes re-use problems — health hazards, aquaculture problems in salmon and daphnia rearing, and agricultural re-use problems like temperature and water hyacinth growth. The essays are, as usual, of uneven quality. Check it out at the library.*

—Peter Warshall



Applications of a vascular aquatic plant filtration system to an agricultural homestead. — *Biological Control*

Biological Control of Water Pollution

J. Tourbier and Robert Pierson, Eds.
1976; 340 pp.

$20.00 postpaid

from:
University of Pennsylvania Press
3933 Walnut Street
Philadelphia, PA 19174
or Whole Earth

Wastewater Use in the Production of Food and Fiber

EPA 660/2-74-041

$5.35 postpaid

from:
Office of Research and Development
US EPA
Washington, DC 20460

Two Peter Warshall pamphlets

Drum Privy Guidelines by Steve Matson and Peter Warshall
(8 pp; $1.00)

Above Ground Re-Use of Greywater by Peter Warshall
(30 pp; $2.00)

both from:
Peter Warshall
Box 42, Elm Rd.
Bolinas, CA 94924

These two pamphlets were produced for the Office of Appropriate Technology of the State of California. They have had a hard time getting out to people through government channels. The 55-gallon drum privy is the best design we have seen so far. It includes some solar heating methods but emphasizes healthy habits and care during the process of turning human waste to compost. The greywater paper is more technical. It reviews all current scientific literature and California health rules. It elaborates a little more on treatment than the CQ *article (Spring 1977) and adds an appendix on large-scale grey water re-use. Sand filters, rack filters, direct re-use, commercial filters and underground disposal are discussed.*

—Peter Warshall

Growing Wild Mushrooms

Just as pot cultivation drew many Americans into the joys of gardening, psilocybin draws us now into the joys of mushroom growing. Here is the best of the no-fooling-around text on grain-media and compost-media (in-jar and outdoor) of some edible and psilocybe mushrooms. Read it slowly. Read it carefully. Bob Harris knows his mycelia, sterile techniques, and, especially, his compost.

Wild Mushroom Growing Supplies *(Bob Harris, P.O. Box 607, Inverness, CA 94937). Access to agar agar, mushroom kits, packaged compost, books, mushroom postcards and T-shirts. No charge for brochure.*

The Kinoko Company *(P.O. Box 6425, Oakland, CA 94621). Both Bob Harris and Kinoko provide mushroom growing kits for the velvet stem (Flammulina soup mushroom), Tree Oyster (Pleurotus), common table (Agaricus), Wood or Tree Ear (salad Auriularia) mushrooms. Kinoko also sells the Shiitake (Black Forest) mushroom growing kit. The Shiitake is yummy, high protein, whiffs of lobster. Each kit costs $8.50 postpaid. [Suggested by Paul Sheffer]*

Psilocybin: Magic Mushroom Grower's Guide *by O. T. Oss and O.N. Oeric (from And/Or Press, 1409 5th St., Berkeley, CA 94710. $4.95 plus $ .50 postage.) Restricted to in-jar grain cultivation of psilocybin. This is an easier text to read than* **Growing Wild Mushrooms** *but does not have as complete information on access to materials, wild spores, starting techniques, etc.*

Growing Wild Mushrooms

(Complete Guide to Cultivating Edible and Hallucinogenic Mushrooms)
Bob Harris
1976; 82 pp.

$3.50 postpaid

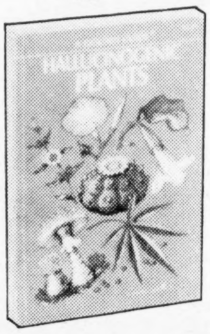
from:
Wingbow Press
2940 Seventh St.
Berkeley, CA 94710
or
Bob Harris
Box 607
Inverness, CA 94937
or Whole Earth

Hallucinogenic Plants

Trust me folks. I've reviewed lots of your fad get-high books. Ingested as many in quest of verification. But never like this. No synthetics. No LSD. No STP. No DMT. This book is founded in a love of living plants — the "miraculous coincidence" that plant and human chemistries mix, create nourishment, life, death and visions. Written by the U.S. Chief of Plant Power Research (Richard Evans Schultes) whose serene, plant-like soul treats our American pot cult in the same measured tones as the Fang Cult of Bwiti. This Golden Guide and **Wizard of the Upper Amazon** *(Fall '75 CQ, p. 138) are the two crucial grips on the vegetative reality of human spirit. Hey . . . out there . . . trust me. It's an old-fashioned sweet bargain.*

—Peter Warshall
[suggested by Annie Hines]

[Way back in the **Whole Earth Catalog** *I concluded a rave review of* **The Golden Book of Camping** *with the wise-ass remark, "I can hardly wait for the Golden Book of Dope." It's here.]*
—SB



Hallucinogenic Plants
(A Golden Guide)
Richard Evans Schultes
1976; 160 pp.
$1.95 postpaid
from:
Golden Press
Western Pub. Co., Inc.
P.O. Box 700
Racine, WI 53404
or Whole Earth

Contents

Old World Hallucinogens

Fly Agaric Mushroom; Agara, Ereriba; Kwashi, Galanga; Marihuana; Turkestan Mint; Syrian Rue; Kanna; Belladonna; Henbane; Mandrake; Dhatura; Iboga.

New World Hallucinogens

Puffballs; Mushrooms; Rape dos Indios; Sweet Flag; Virolas; Masha-hari; Jurema; Yopo; Vilca; Genista; Mescal Bean; Colorines; Piule; Ayahuasca; Shanshi; Sinicuichi; San Pedro; Peyote; "False Peyotes"; Hierba Loca; Scared Morning Glories; Hojas de la Pastora; Coleus, Borrachera, Arbol de los Brujos; Chiric-Caspi; Daturas; Tree Daturas; Culebra Borrachero; Shanin, Keule, Taique; Tupa, Zacatechichi.

•

History of cannabis use dates to ancient times. Hemp fabrics from the late 8th century B.C. have been found in Turkey. Specimens have turned up in an Egyptian site nearly 4,000 years of age. In ancient Thebes, the plant was made into a drink with opium-like effects. The Scythians, who threw cannabis seeds and leaves on hot stones in steam baths to produce an intoxicating smoke, grew the plant along the Volga 3,000 years ago.

Chinese tradition puts the use of the plant back 4,800 years. Indian medical writing, compiled before 1000 B.C., reports therapeutic uses of cannabis. That the early Hindus appreciated its intoxicating properties is attested by such names as "heavenly guide" and "soother of grief." The Chinese referred to cannabis as "liberator of sin" and "delight giver." The Greek physician Galen wrote, about A.D. 160, that general use of hemp in cakes produced narcotic effects. In 13th-century Asia Minor, organized murderers, rewarded with hasheesh, were known as hashishins, from which may come the term assassin in European languages.

Hemp as a source of fiber was introduced by the Pilgrims to New England and by the Spanish and Portuguese to their colonies in the New World.

大
麻

Chinese characters TA MA, the oldest known name for cannabis

大 = TA (pronounced DA). Literally this means an adult man, and by extension may signify great or tall.

麻 = MA. It represents a fiber plant, literally a clump of plants (林), growing near a dwelling (广). Hence, the two symbols together mean "the tall fiber plant," which everywhere in China signifies cannabis.

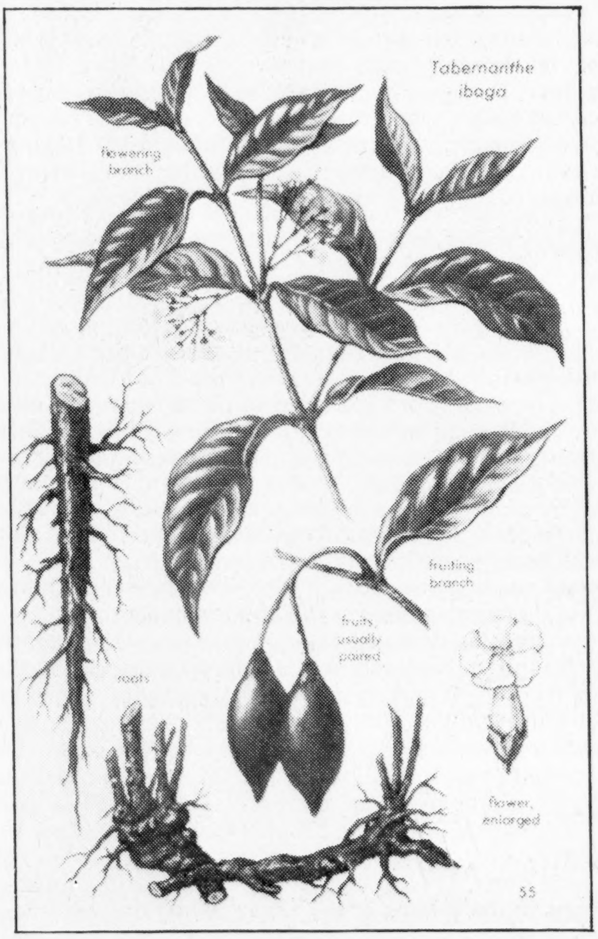
•

Iboga *(Tabernanthe iboga)*, native to Gabon and the Congo, is the only member of the dogbane family, Apocynaceae, known to be used as an hallucinogen. The plant is of growing importance, providing the strongest single force against the spread of Christianity and Islam in this region.

The yellowish root of the iboga plant is employed in the initiation rites of a number of secret societies, the most famous being the Bwiti cult. Entrance into the cult is conditional on having "seen" the god plant Bwiti, which is accomplished through the use of iboga.

The drug, discovered by Europeans toward the middle of the last century, has a reputation as a powerful stimulant and aphrodisiac. Hunters use it to keep themselves awake all night. Large doses induce unworldly visions, and "sorcerers" often take the drug to seek information from ancestors and the spirit world.

Ibogaine is the principal indole alkaloid among a dozen others found in iboga. The pharmacology of ibogaine is well known. In addition to being an hallucinogen, ibogain in large doses is a strong central nervous system stimulant, leading to convulsions, paralysis, and arrest of respiration.



Hallucinogens and Culture

A series of essays trying to express in our clumsy Judaeo-Christian language the divinity of plants. It seems (for very complicated reasons of religion and language) almost impossible for Euro-Americans to accept and to respect the glory and even salvation to be found in plant-life. Somehow we trust EST or co-counseling more. Well, Furst is a man of the academy and his writing could be simpler and less referential, but nowhere else can you read of the Mazatec belief that mushrooms are the blood of Christ or why toads and toadstools appear together in European folklore or why the Huichols think deer are deities.

—Peter Warshall

Hallucinogens and Culture
Peter Furst
1976; 173 pp.
$4.95 postpaid

from:
Chandler & Sharp Publishers
5609 Paradise Drive
Corte Madera, CA 94925

Mushroom Hunting in Oregon

by Andrew Weil

During the spring and summer months, when no Liberty Caps are available, Oregonians can use another variety of psilocybin mushroom in the genus *Panaeolus*. It is easily collected in quantity on piles of rotting hay in manured cow fields in the Willamette Valley, where most of the population of the state lives. This mushroom, although small, is twice as fleshy as the Liberty Cap, yet the dose is the same: 20 mushrooms. That is to say, the *Panaeolus* is less potent. Moreover, the quality of its effect is not as good. Particularly when fresh it tends to produce symptoms of toxicity. Some persons experience nausea with it; I get a peculiar and uncomfortable restlessness for an hour after eating it. The toxicity is reduced on drying but not eliminated. And the *Panaeolus* is less effective at triggering visual spectacles. Nonetheless it is a popular mushroom during the warm months.

One of the more powerful woodland species of *Psilocybe* is *P. baeocystis*, which occurs throughout western Oregon and Washington. It is a larger mushroom than the Liberty Cap, and two caps may be sufficient for a strong experience. Last fall *P. baeocystis* turned up in large numbers on the mulch under rhododendron bushes in a municipal park in the middle of Eugene. It was collected and used by many people. Just before Christmas a bookstore here in Tucson was offering them for sale at $1.50 each ("Limit: 12 to a customer"). They were advertised as "Psilocybin mushrooms from Eugene, Oregon," and sold out in a few days.

Other species have been turning up in unusual places. A species that may be *Psilocybe cyanescens*, related to the *derrumbe* ("landslide") mushroom of Oaxaca, began growing heavily on the campus of the University of Washington in Seattle in the fall of 1973. Word of it got out quickly, and students began eating it to the consternation of University officials. The mushroom appeared to be spreading by way of a bark mulch used by the buildings and grounds crew; at least, each time a new area of the campus was mulched, it came up in great numbers.

During a trip to Washington State last October I found this mushroom growing abundantly on a lawn in front of a commercial nursery just south of the state capital at Olympia. It was first discovered there by an Oregon collector now living near Olympia who was taking his laundry to a laundromat next to the nursery and noticed the mushrooms on the lawn. He tried them and confirmed their activity. They are lovely, chestnut-brown, fleshy mushrooms that readily turn blue (*cyanescens* means "blue-turning") and have a persistent annulus or veil around the upper stipe, an unusual character in this genus. Some users call them "Washington Blue Veils" and rate them as strong as the Liberty Caps. They grow in clusters, the stipes arising from a common point. When I first met up with them, I recognized them at once as the mushrooms I saw in the visions of my first Liberty Cap experience.

I had a chat with the owner of the nursery about his lawn. He had not failed to notice large numbers of young people, especially students from nearby Evergreen State College, crawling about on his property picking mushrooms. "Sometimes it gets so bad, I have to turn the sprinklers on to get rid of them," he complained. I explained to him what the mushrooms were, assured him that no one could get hurt with them, and got permission to collect specimens for identification. He told me his staff had prepared hundreds of similar lawns all over Olympia using the same mulch and manure. It was Indian Summer in Washington, too, with almost no mushrooms anywhere. Heavy sprinkling had brought them up in front of the nursery. But next fall, when the rains will probably come as usual, *Psilocybe cyanescens* may well turn up all over the state capital. . . .

The essence of the revolution in consciousness occurring all about us is the emergence of unconscious forces long denied by our culture and the beginnings of attempts to integrate them into the fabric of our individual and social lives. Mushrooms are external symbols of those forces and their invasion of our outward lives is a dramatic and encouraging sign of the progress of this great change. ■

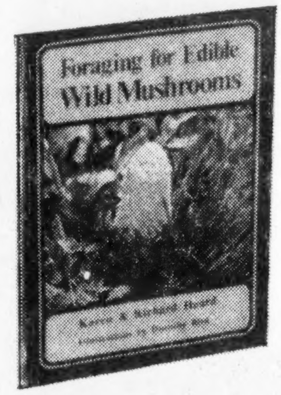
Foraging for Edible Wild Mushrooms and Poisonous and Hallucinogenic Mushrooms

These two books make the best companion guides for beginning mushroom seekers. Thirty-six edibles and clear description of the poisonous species makes these two books essential for those who pass from curiosity to foraging.

—Peter Warshall

Foraging for Edible Wild Mushrooms
Karen & Richard Haard
1974; 94 pp.

Poisonous and Hallucinogenic Mushrooms
Karen & Richard Haard
1974; 94 pp



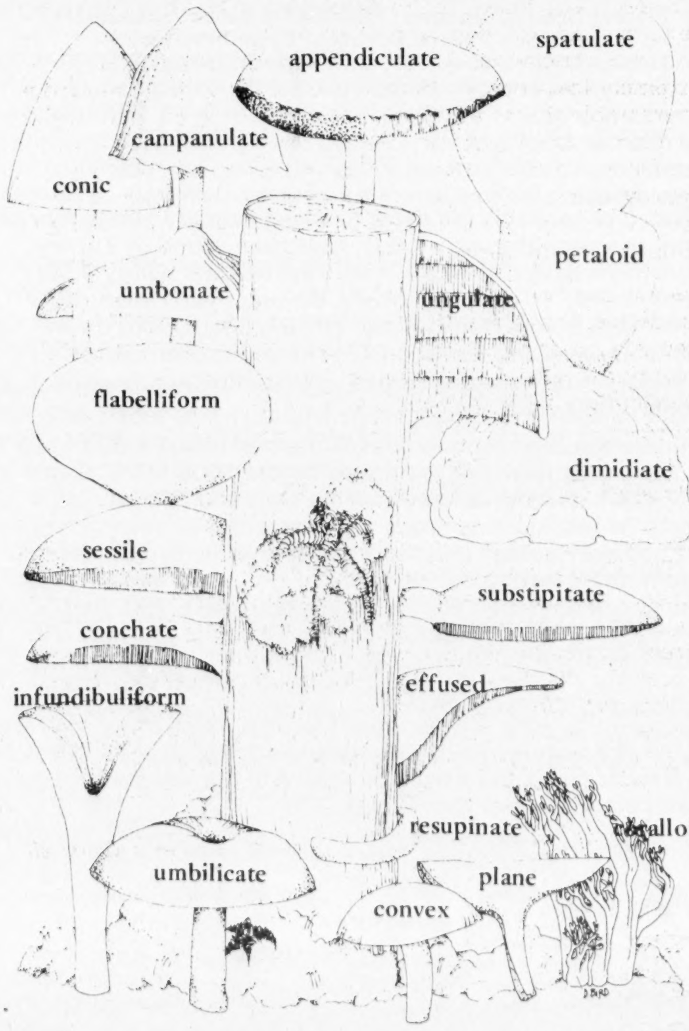
both
$4.95 postpaid

from:
Cloudburst Press, Ltd.
Box 79
Brackendale, B.C.
Canada VON 1HO

or
Bob Harris
Box 607
Inverness, CA 94937
or Whole Earth

June and July. In the Washington-Oregon-British Columbia coastal areas, summer dry spells cause any short mushroom flush to fade into the dust of summer logging roads. Good places to collect are irrigated lawns *(M. oreades)*, snowline (various species) and wet rotting hardwood in the lower elevations *(Pluteus cervinus)*. During June, July and early August the best places to collect are irrigated lawns and hardwood forests. Coniferous forest in this area are poor this time of year.

—Foraging for Edigle Wild Mushrooms



—Foraging for Edible Wild Mushrooms

Tuning in to Nature

This book is causing considerable controversy in scientific circles. Some entymologists believe the discoveries documented here will do for our understanding of insect communication what the plate theory has done for geology. Others think Callahan is barking up the wrong tree. Maybe it's just that the critics don't like a scientist who uses exclamation marks in his writing.

Callahan believes insect antennae work like radio antennae, except that insects are sensitive to infrared radiations instead of radio waves. Insects navigate and communicate by using these radiations. If Callahan is right, the most important future spin-off from this would be to learn to mimic these frequencies, and then either lure pests into traps or jam their communications to prevent mating. This novel alternative to chemical pesticides comes from a self-confessed mystic with a prose style at times reminiscent of Loren Eiseley. Callahan has been working as an insect morphologist for the past 20 years for the USDA in Florida.

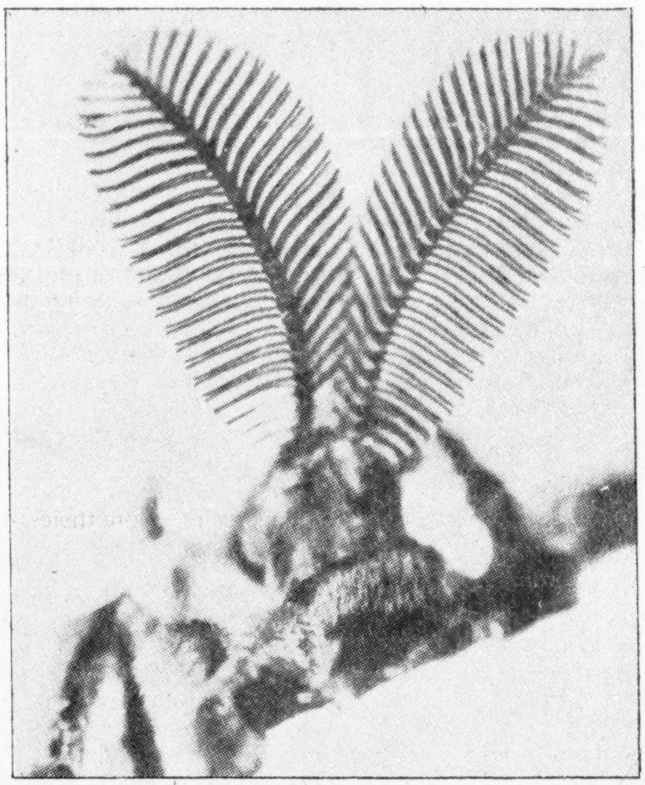
—Richard Nilsen

Tuning in to Nature
(Solar Energy, Infrared
Radiation and the Insect
Communication System)
Philip S. Callahan
1975; 240 pp.
$10.00 postpaid
from:
The Devin-Adair Co.
143 Sound Beach Ave.
Old Greenwich, CT 06870
or Whole Earth

TUNING IN TO NATURE

Infrared frequencies are the natural frequencies in which we are bathed all our lives. Inasmuch as the attractant, or jamming, frequencies would be narrowband, they would be of extremely low energy. In fact, the radiated molecules from innumerable scents floating under your local mercury-vapor streetlamps are, no doubt, putting out hundreds of such frequencies at every street corner in America. It is these lamp-radiated scent molecules that attract and confuse so many night-flying insects swarming around in the radiated vapors under the lamp.

There is one final practical advantage to such an insect control device, in addition to its ability to attract only the selected species to which it is tuned: It can be turned off when not in use. That is precisely what is wrong with insecticides — they cannot be turned off.



Antenna of the male cecropia moth. The family of saturnid moths contains the largest members of night-flying moths. The photograph clearly shows the lateral arms extending from the antenna in pairs. The arms support thousands of sensilla that are arranged in arrays along the arms and detect scent molecules. The sex life of the moth is complicated beyond imagination, and these flying, egg-laying machines seem to exist as if directed by some incomprehensible force; as if some huge impersonal computer were feeding signals from a controlling transmitter into the moth's antenna-detector.

•

A moth flying through the air attracts wind-carried molecules to its surface. It was not surprising to me, for the antenna-thermoelectret properties assured that the free-floating molecules would be pulled to the delicate microscopic sensilla. I performed these experiments in 1965. By 1975, physicists were using plastic thermoelectrets to attract pollution molecules from the dirty air over cities. The molecules being studied in this manner included alcohols, acetates and aldehydes. These are the very same types of molecules that constitute most sex and host-plant insect attractants!

A Field Guide to Western Mushrooms

After two years with this book I've finally decided to review it. **The Savory Wild Mushroom** *(EPILOG, p. 476) is still the best single guide to western mushrooms. Smith's classification is over-picky and baroque; he seems more interested in current confusion in mushroom taxonomy than helping the curious and the forager. But there are 205 mushrooms in this volume. Some cannot be found in any other guide to western fungi. [UPDATE: Orson Miller's* **Mushrooms of North America** *(EPILOG, p. 476) has not improved with time. At least from the Pacific view, the book is not worth it.]*

—Peter Warshall

A Field Guide to Western Mushrooms
Alexander Smith
1975; 280 pp
$16.50 postpaid

from:
The University of
Michigan Press
615 East University
Ann Arbor, MI 48106
or Whole Earth

American Honey Plants

This is one of those classic cyclopedias that life-time specialists used to write on a specific subject. First published in 1920, **American Honey Plants** *has gone through numerous revisions, additions and up-datings ever since. Contents are organized alphabetically beginning with Acacia and several hundred entries later, concluding with Zygophyllum. Pellett was a dedicated bee-keeper-scientist and his writing offers many useful insights. Wild, cultivated, domestic and exotic species are covered. There are also entries on honey sources of each state. Most of the old photographs are excellent.*

—Drew Langsner

American Honey Plants
(Together with those which
are of special value to the
beekeeper as sources of pollen)
Frank C. Pellett
1920, 1976; 467 pp.

$7.80 postpaid
from:
Dadant & Sons
Hamilton, IL 62314
or Whole Earth

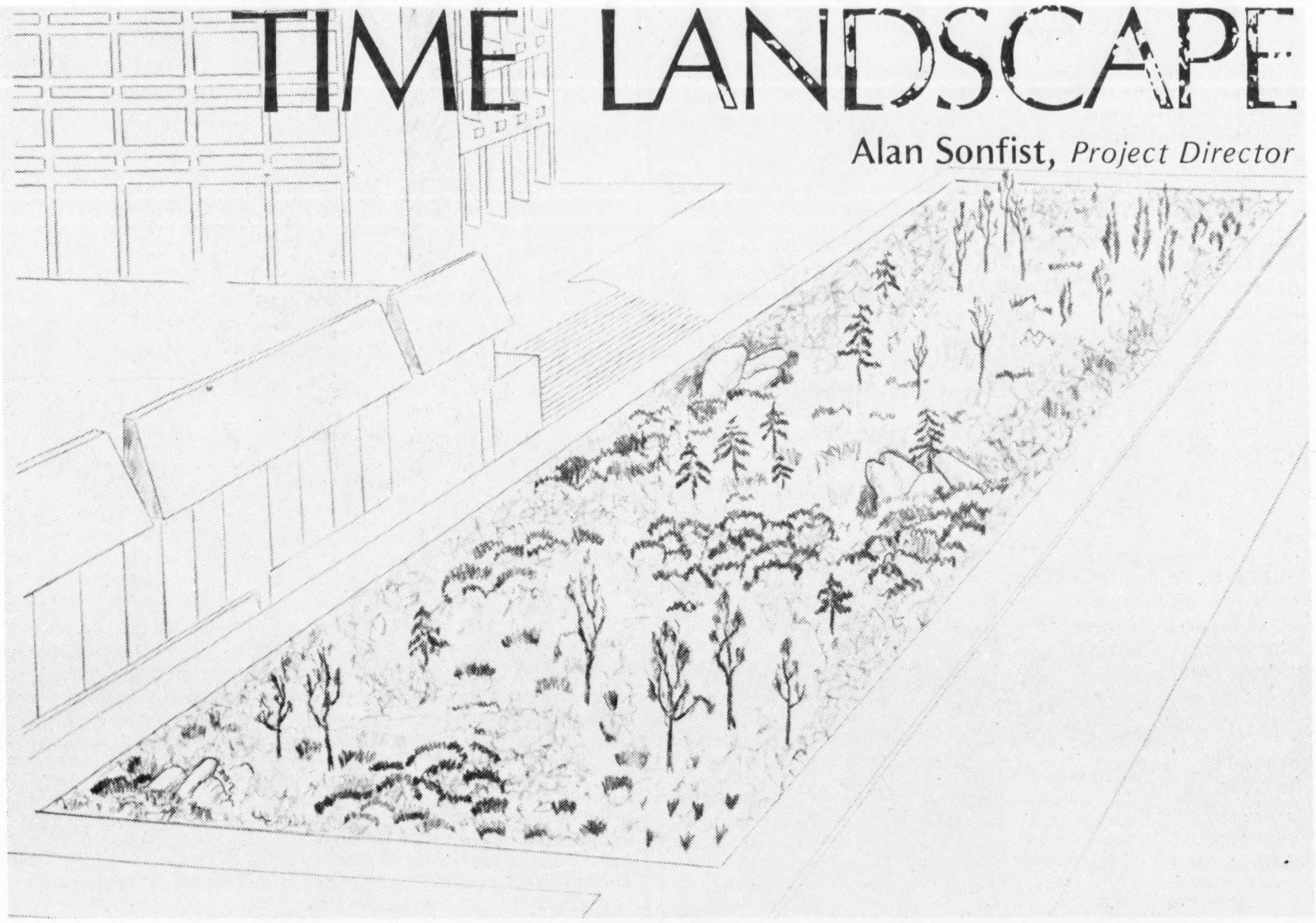
Buffalo-berry *(Shepherdia argentea)*.

The buffalo-berry is one of the hardiest of native shrubs and its currant-like fruit was an important article of food with the Indians of the plains region. In the wild state it is commonly found from Manitoba southward to Kansas. Since it withstands both cold and drouth it offers special opportunity to the plant breeder who will devote the time necessary to its improvement.

It is one of the first honey plants to bloom in spring and is valuable for early stimulation in the Dakotas and Minnesota.

TIME LANDSCAPE

Alan Sonfist, *Project Director*



10 YEARS

"Time Landscape" is a contemporary re-creation of the natural phenomena that once existed on a particular site. The project for New York City is being realized on an 18,000-square-foot lot at Houston and Bleecker Streets on LaGuardia Place. Presently, the site is partially paved and, as the Community Board has described it, is an "eye-sore" to the neighborhood. "Time Landscape" will re-create the pre-colonial forest, beginning with the first succession and planning for natural evolution to a mature forest over several decades.

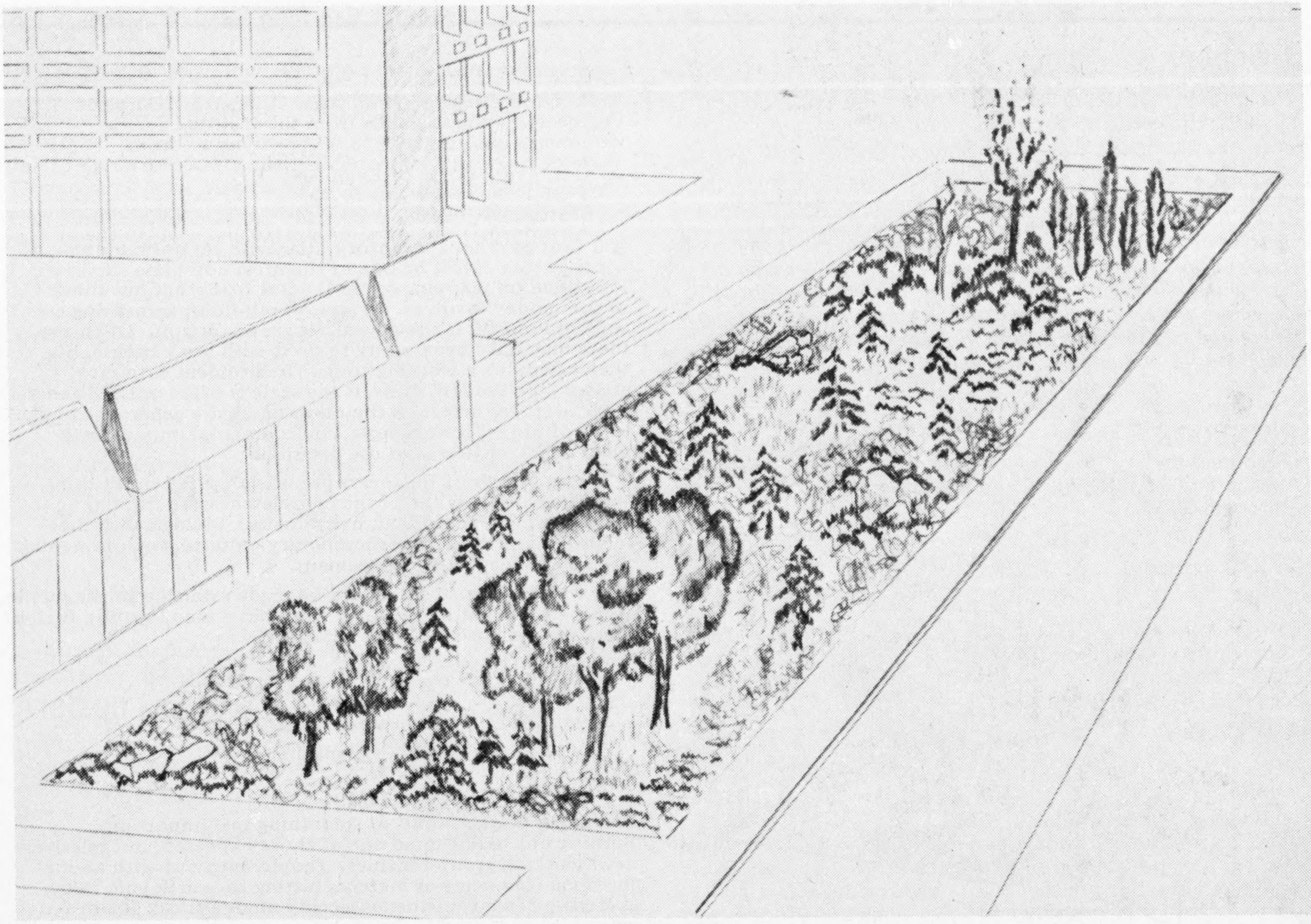
The site has been analyzed by a team of researchers, each representative of a different reality of the land. A botanist and an ecologist have determined what natural phenomena probably existed in the pre-colonial forest. An historical consultant has researched original deeds and documents of the land, tracing its shifting form through changes in use. An architect has helped design the site in relationship to the present community. This historical, botanical, and ecological information will be visible on Informational Plaques at the site. The project includes the publication of a booklet on the creation of the site with a step-by-step program for creating other "Time Landscapes" in cities all over the United States. The project is being done, and will be maintained, in cooperation with the owners of the adjacent buildings and Local Community Board No. 2, and has broad-based support from many different segments of the community.

The history of a city includes its pre-urban stages. In initial surveys taken to determine people's definitions of nature in the city, a psychologist found no comprehension or knowledge of the historical nature of the city. In "Time Landscape," past time is materialized in the present. It is a reference point for all the changes the surrounding land has undergone, as well as a public monument. Within an area of landmark buildings, we are creating landmark nature.

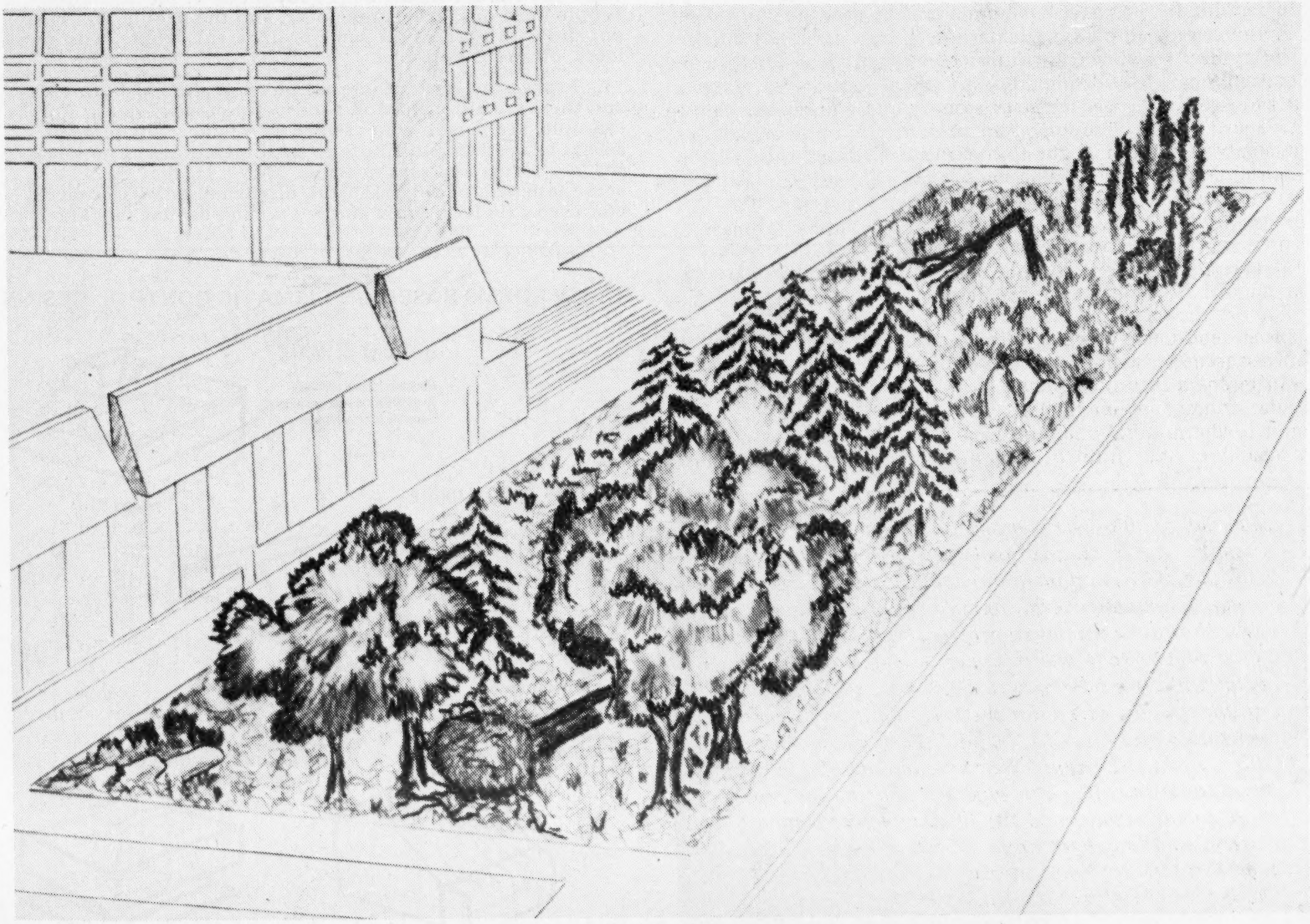
The concept of evolutionary change can be applied to any site in any city. This is a pilot project for a kind of reconstruction and documentation that can coincide with new building in the city. Gardens or plazas can be given meaning by being planted with forms indigenous to that site. Obvious examples are marsh pools, grassland flowers, rockledge mosses and ferns. Different periods of time can be selected for re-creation: prior to settlement, during agricultural use, or later, when trees and shrubs once immigrant to the site have been naturalized. Different stages in the natural succession of a forest or grassland can be chosen. The site can be maintained at one stage or allowed to progress to its mature state. Present conditions such as atmospheric pollution can be counteracted to maintain historical accuracy or allowed to modify the historical forest into a twentieth-century adaptation. Thus, as a city renews itself architecturally, it can also re-identify its origins and its unique natural-traditional characteristics. ■

Alan Sonfist has been working on this piece since 1969. He submitted a proposal to New York City to allow him to restore a tract of city-owned land to the state it was in prior to human settlement. He formed a non-profit research company called Conditions to figure out what that original state of New York City land most probably was. In 1972, it looked like he was going to be able to do it when Thomas Hoving of the Metropolitan Museum offered to let him use a quarter acre of Central Park on top of a proposed underground parking garage for the Met. This fell through when the parking lot was rejected by the City Council. Then he got Finch College to let him do it in a courtyard behind their museum in 1974, but Finch College went bankrupt before he got it together. Apparently now he has gotten permission to restore an abandoned city block in lower Manhattan. Virtually all of the research has long been done. Harvard Botanical Research has donated some trees and smaller flora, and Sonfist had a show of the material and research gathered, several months ago.

—Robert Horvitz



25 YEARS



50 YEARS

Soft Technology

Rainbook

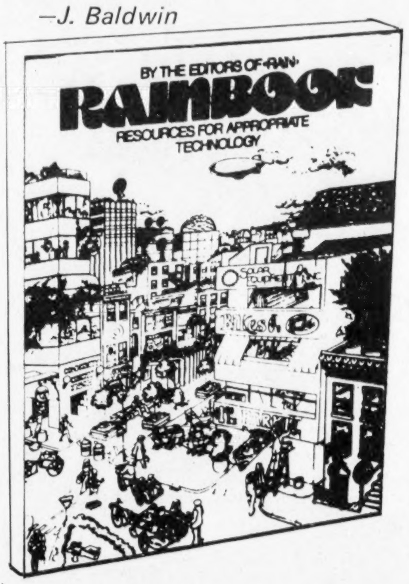
The editors of RAIN *bring you a finely sifted collection of what has proven to be good and useful in the baffling tangle of what's available. The sifting is done (as usual with this crew) by persons who are actually working with the subject of the review, giving a quiet honesty that permeates the entire Rainbook. There's also a refreshing emphasis on a sense of community development rather than the lone-homesteader-against-the-world; "let's work together" instead of "screw you." Makes you feel good just to open Rainbook anywhere and snoop around. And, it's the only place I know where you can find this information in one box, it's just in time, and it's done right. You couldn't ask for more.*

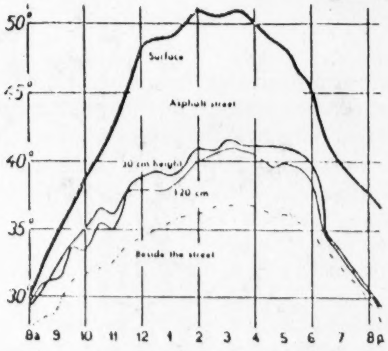
—J. Baldwin

RAINBOOK
(Resources for
Appropriate Technology)
Editors of Rain
1977; 250 pp.

$7.95 postpaid

from:
RAIN: Journal of
Appropriate Technology
2270 N.W. Irving St.
Portland, OR 97210
or Whole Earth


BY THE EDITORS OF RAIN
RAINBOOK
RESOURCES FOR APPROPRIATE TECHNOLOGY



TEMPERATURES ABOVE AN ASPHALT STREET

Washington Environmental Atlas, U.S. Army Corps of Engineers (with assistance from the Institute for Environmental Studies), 1975, price unknown from:

U.S. Army Corps of Engineers
4735 E. Marginal Way S.
Seattle, WA 98134

A 3 foot by 2 foot inventory/atlas with several hundred contributors. Must be one of the most complete surveys ever done (in mapping format). Our first reaction: think of the money involved. It lays on my floor, something to walk around till it's reviewed. It grows on you. Of course, there may have been a way to do it with less expense, but then again, it's a working tool. The problem with most atlases, like the *NW Atlas*, is the scale is often only of general interest; these maps, on the other hand, are generous enough to be of use in, for example, environmental impact statements, real, critical land use decisions.

Is there a Corps of Engineers prejudice? No, I don't think so. The balance is there, the completeness of criteria, which involves geological, hydrological, biological, archeological, historical and contemporary cultural, environmental use and recreational management.

Ask your library. This should be made available to the public. Hours of fascinating reading. Even has a map locating Bigfoot sightings — right after Fish & Mollusks.

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The Staff Burn Out Syndrome, $1.25 from:

The Drug Abuse Council, Inc.
1828 L Street, N.W.
Washington, DC 20036

This small booklet hints at something real important. Burning out has become one of those expected, but relatively new, working group routines. People burn out with about the same frequency as meteors hitting the earth and, taken as a wave of movements, especially among small, kind-of-volunteer, non-profit, social change, social crisis, experimentally-managed groups, the waves created by the burn-out cycle are one of the basic influences on social change. People burn out, others take over, and the people that burn out show up later, as the same or different people, with new ideas, different outlooks.

"As I suggested earlier,there are physical signs of burn-out and there are also behavioral and psychological signs. For example, the person who used to be a talker now remains silent; he used to contribute to staff meetings but now just sits in a corner and says nothing. Why? He may have become fatigued, bored, resentful, disenchanted, discouraged, confused. He feels futile and fed up and cannot talk about it."

Energybook 2

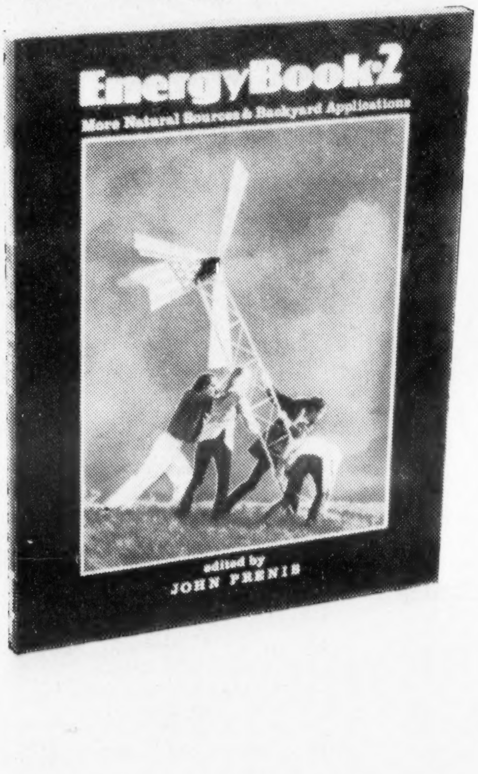
The first Energybook *didn't stand up too well against its competition, but this one does. You'll find many things in here that have not been discussed elsewhere. They've tightened up the technical bits too. That's about all you can ask. Nice printing job makes it a pleasure to read.*

—J. Baldwin

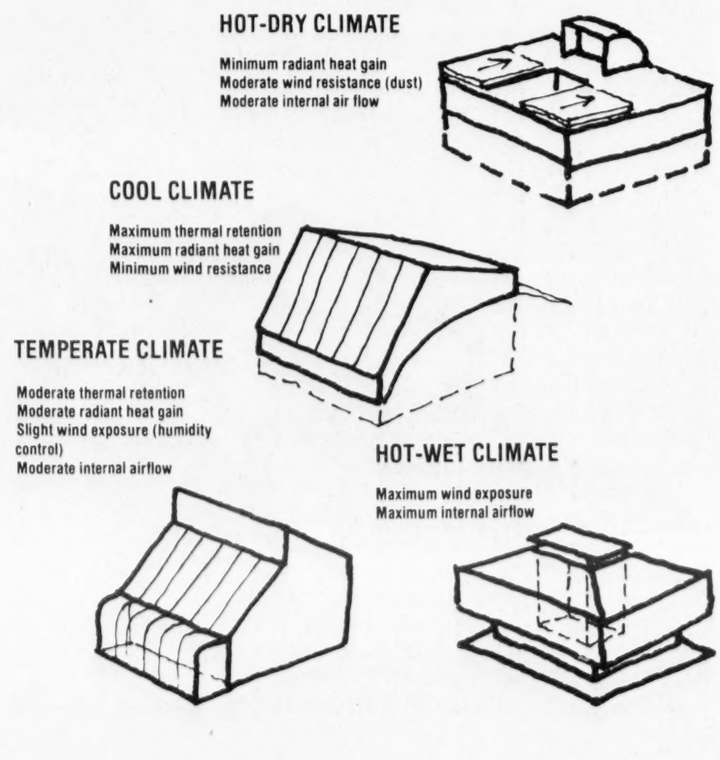
Energybook 2
John Prenis, Ed.
1977; 125 pp.

$5.25 postpaid

from:
Running Press
38 South 19th St.
Philadelphia, PA
19103
or Whole Earth


EnergyBook 2
More Natural Sources & Backyard Applications
edited by
JOHN PRENIS

HOUSE FORMS BASED ON CLIMATIC CONTROL DESIGN


HOT-DRY CLIMATE
Minimum radiant heat gain
Moderate wind resistance (dust)
Moderate internal air flow
COOL CLIMATE
Maximum thermal retention
Maximum radiant heat gain
Minimum wind resistance
TEMPERATE CLIMATE
Moderate thermal retention
Moderate radiant heat gain
Slight wind exposure (humidity control)
Moderate internal airflow
HOT-WET CLIMATE
Maximum wind exposure
Maximum internal airflow

An Ark for Prince Edward Island

Here is the only definitive report on the astonishing success of the New Alchemist's Ark in Canada. The structure was completed last fall and — minus a summer's heat storage — performed beautifully through the coldest winter in 100 years. Three different solar collection and storage systems. Two growing areas inside. Major aquaculture system. New wind technology — Hydrowind. Fully instrumented with monitoring devices. All systems integrated. Delivered on schedule and under budget.

That's the building. The book is also epic — 11"x 22"x 1-1/2", 164 pages, 8 pounds, color photos, detailed charts, diagrams, working drawings, lists, and detailed philosophy.

Not cheap. Only 18 were printed. The New Alchemists will print more if there's demand. Put legs on it and it will be its own coffee table.

—SB

An Ark for Prince Edward Island
New Alchemy Institute
Dec. 1976; 164 pp.
$200.00 postpaid
from:
The New Alchemy Institute
Attn: John Todd
Box 432
Woods Hole, MA 02543

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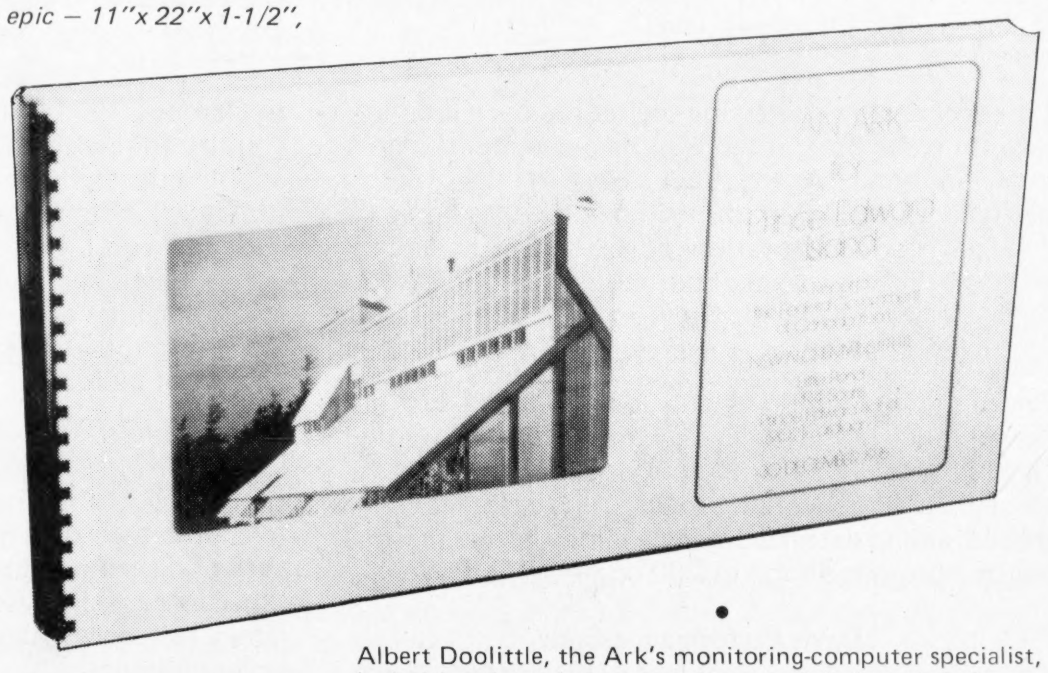
The Ark project began as a question, asking if it might be possible to create a human habitation that is a bioshelter capable of providing its own energy and climate, treating its own wastes and growing foods for the residents. We were also interested in carrying the concept one step further to design a human habitation-bioshelter capable of being a small economic unit paying its way through the sale of its excess power and produce.



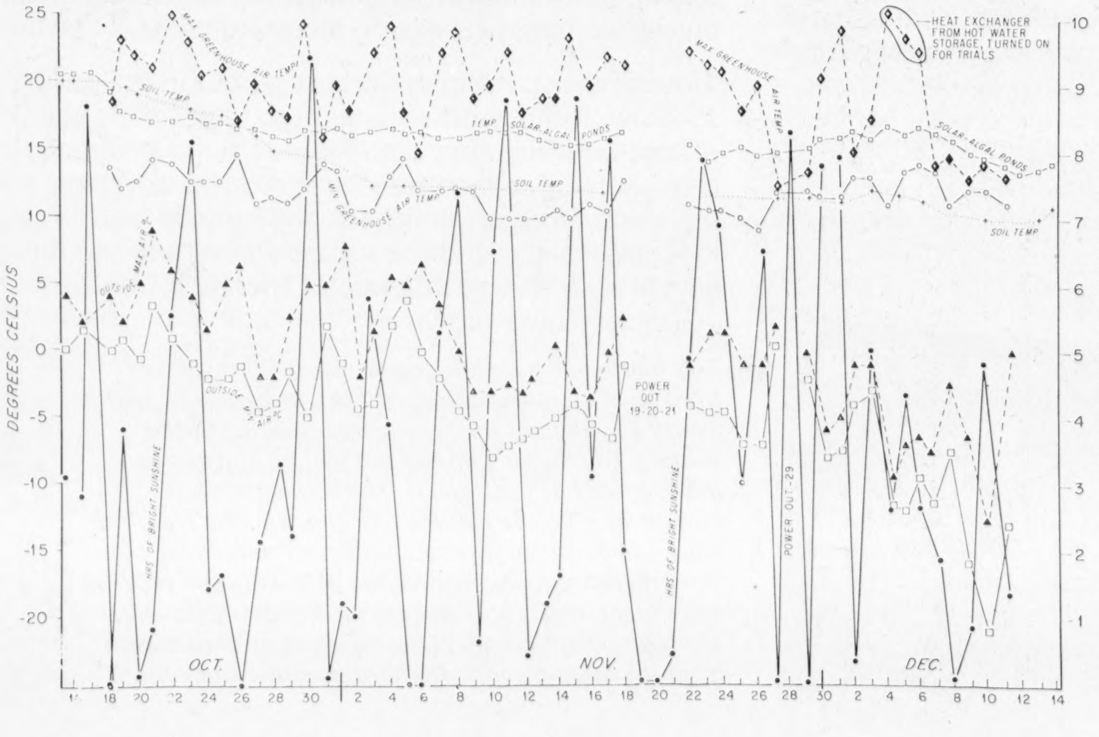
The growing areas tend to function as half-way stations between the residential interior and the external environment. There are no barriers, only external "membranes" separating the innermost living and laboratory spaces from the biological communities where one works and the out-of-doors. There is a natural progression from one sub-environment to another. Because of this, the world outside appears less hostile, more familiar and even an ally since it is the source of ones fuel and power needs.

Working with vegetable crops, flowers or trees, or tending the fish during a storm outside is exciting. Watching in the laboratory the sensors reading out the Ark's various functions and monitoring its health while the wind rages in the dead of night connects one more closely to the forces which sustain all life.

•

Albert Doolittle, the Ark's monitoring-computer specialist, is devising tiny micro-computers to precisely match the needs of the Ark's subsystems. Their capacity and programming will be simplified and the cost of their fabrication ultimately will be much less than most micro-processors available today. His work will eventually interphase human, biological and electronic controls so that a relatively inexperienced bioshelter resident could be constantly trained by the systems themselves without having to worry about their inexperience leading to failure in any major subcomponent. For example, on an overcast day the micro-processor basing its decision on accumulated information and incoming sensory inputs might print out or display instructions telling the resident to cut back fifty percent on their supplementary feeding to the fish and then teach by explaining that the low light has reduced the ability of the algae to produce enough oxygen to cope with the biological oxygen demand that would be created by normal levels of supplemental feeding.

CLIMATE vs. ARK GREENHOUSE ZONE PERFORMANCE (no supplemental heating)



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Weather conditions at the site proved uncommonly severe during early December. Winds between 40 and 60 mph for a week prevented mounting the wind machine back on the tower. When winds abated for a brief period the large crane normally used was not available. The crane operator brought his second, smaller crane which he thought would be long enough. When the machine was raised toward the tower top, it was clear the crane was too short. This resulted in the mill being suspended from the crane while the larger crane was being sought to replace it. During this period the winds picked up again and the mill was damaged against the boom of the crane.

The Transformation of the Tract Home

This Davis, California, subdivision has solar heating, bike paths, crop land and room for goats and chickens

BY RICHARD NILSEN

Photographs by David Edwards

Low cost energy-conserving shelter has been around now for some time; it tends to be owner-built, innovative and rural. At the other end of the scale, the person with $100,000 to spend on a custom home has an ever widening variety of soft tech hardware to choose from. But what about middle class home buyers, where or how do they get to take advantage of the recent advances in energy efficient home design?

One of the first, and so far only, developments to offer energy efficient middle income housing is Village Homes of Davis, California. Developer Mike Corbett spent three years working to get Village Homes off the ground, and to date has 36 single family homes finished out of a projected total of 200 on his 69 acre site.

Davis Performance Code

The development might still be on the drawing boards if it wasn't for the progressive attitudes of the Davis City government. Spurred by a group of university students, the city and the University of California at Davis funded a study* of energy efficient housing design in 1973. The Arab oil embargo that year proved fortuitous and helped legitimize the study, as millions of Americans were given time to meditate on the finite nature of world resources while waiting in gas lines all across the country.

Some interesting data resulted from the Davis study. In one apartment complex it was found that an east-facing top floor unit required six times as much energy for summer cooling as did a ground floor north-facing unit. The air conditioner was fighting the morning sun shining in the east-facing windows. That's simple enough, but the point is, no one had ever thought to raise these questions before.

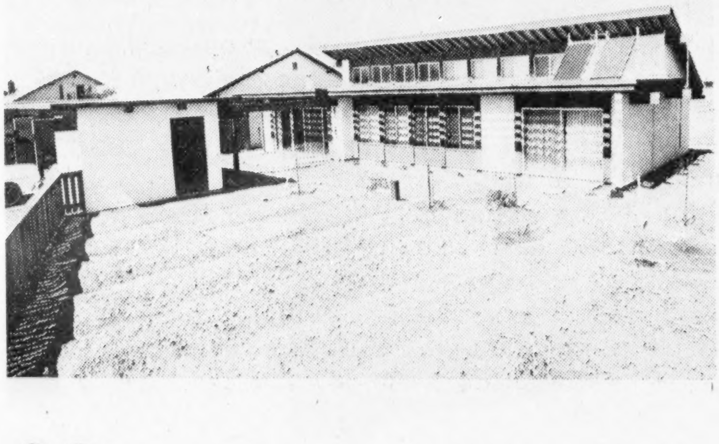
In October, 1975, Davis became the first city in the country to recognize these kinds of effects when it adopted the study's recommendations into its building code. John Hammond, one of the study leaders, and now with Living Systems in nearby Winters, California, puts it more bluntly: "This is the first code which has ever recognized that there is a sun in the sky, and that its position affects the heating and cooling of buildings."

Most building codes are prescriptive, specifying the details of construction. The Davis energy standards are written as a performance code, allowing builders to choose their own methods and materials, so long as the finished building does not have a heat loss exceeding 150 BTU/sq. ft. of floor space for single family residences (the standards get tighter for larger buildings).

The Search for an Alternative

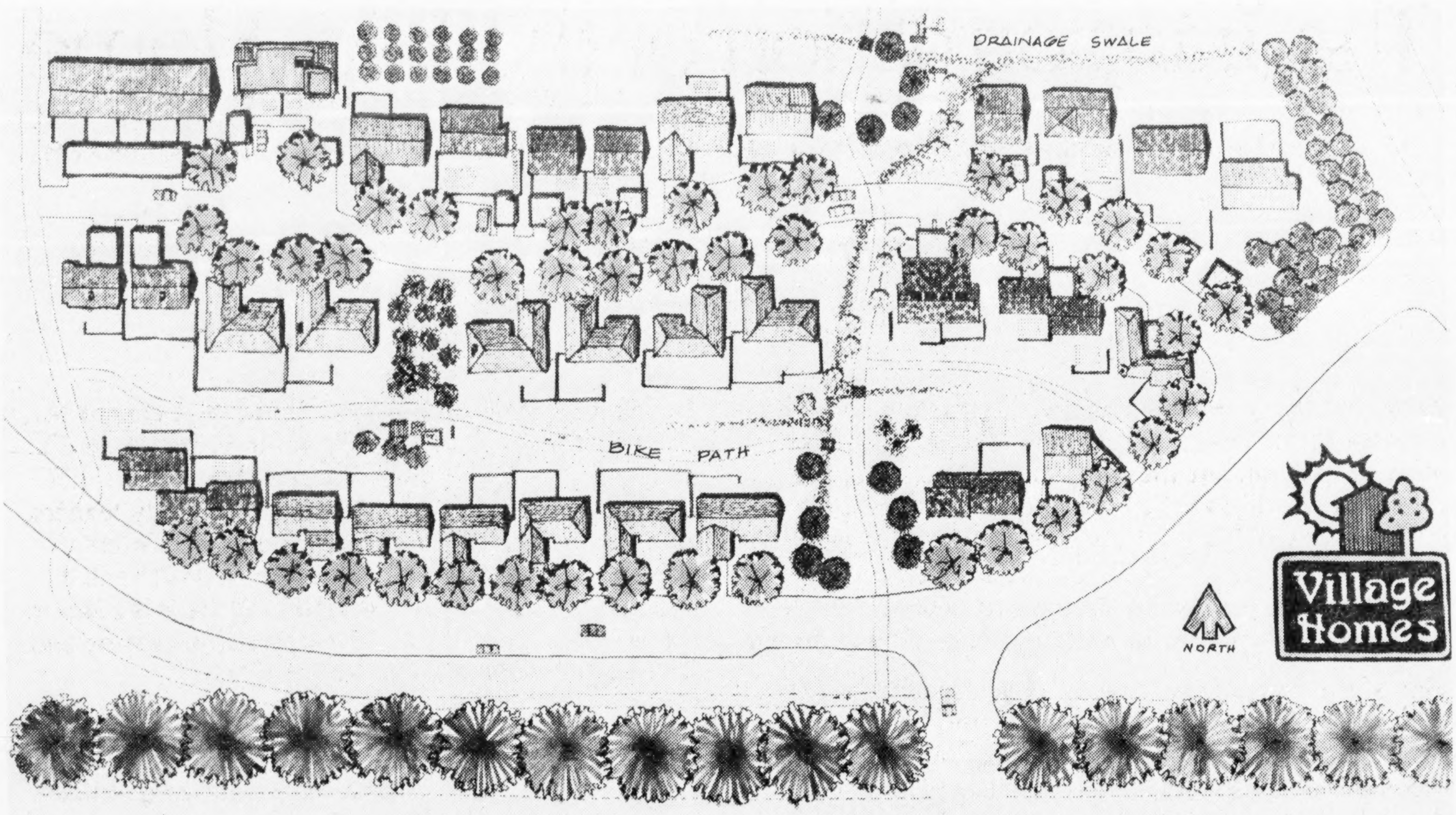
If Mike Corbett's subdivision is unusual, his own story is not. The son of a home builder, he saw his share of typical American suburban life. His family moved several times in the rapidly expanding Sacramento suburbs; five years was the longest he lived in any one house. By the mid-1960s he was building custom homes on his own. In the late 1960s he returned to school at Davis, studying architecture and psychology. He was aware of the stigma attached to him as a builder by some of his more radical friends, and was also exposed in his studies to the social consequences of poorly planned suburban sprawl – loss of farm land, increased dependence on cars, unhappy teenagers, increased crime.

Tired of the status quo, Corbett set out in the early 1970s with thirty other families to look for a piece of land on which they could jointly build a community. After nine months of unsuccessful searching, the group fell apart, but Mike and his wife kept looking. They found the Village Homes site and bought it, with a small group of friends as investors.



This house will have a vegetable garden instead of a front lawn. You're looking at the southern side, with plenty of windows for passive solar heating in the winter. The higher summer sun will be blocked by the overhanging roof eaves. The carport/storage room is next to the parking bay and separate from the house, so as not to interfere with maximum heat gain from the winter sun. Notice the solar collectors for hot water on the roof, and the lack of east (and west) windows, which would collect a lot of unwanted heat from the morning and afternoon summer sun.

**A Strategy for Energy Conservation*, 51 pp., paperback, $5.00 postpaid from Living Systems, Rt. 1, Box 170, Winters, CA 95694.



The streets and bike paths are gently curving, but the lots are on a strict North-South axis – every house receives equal sunlight. The bike paths are also fine for walking, and it's possible to go anywhere in the subdivision without using the streets. The paths traverse the common areas behind the houses. Car parking is in parking bays for each house. There is no street parking, which means streets are as narrow as 20 feet, instead of the usual 28 - 34 feet of a typical subdivision. Narrow streets require less asphalt, permit more of the total area to be in greenbelts, and ease the summer cooling problem in houses caused by the oven effect of re-radiated heat from wide black streets. Many of them are cul de sacs; all of which tends to de-emphasize the automobile. At Village homes, the hot-rodders are on bicycles.

The biggest single hurdle was convincing a bank to loan money for the front end improvements the development would need, like surveying, paved streets and water hook-ups. Although Corbett's basic idea was simple – a development with larger greenbelts and fewer houses – bankers were leery of his innovations. Corbett tried no less than eight banks and savings and loans before he finally found anyone who would say yes. And along the way he had to scrap some of his innovations, most notably a plan to hook every eight houses into their own septic system instead of using the city sewers.

The lots are not large, averaging four to five thousand square feet, but this allows more land to be kept in greenbelts, both for the 1/3-acre common areas that are shared by every eight houses and for permanent agricultural lands within the development that are set aside for crops, pastures, orchards and vineyards. Fully 40% of the total area of Village Homes is in greenbelts, more than any conventionally developed subdivision in existence.

Corbett is building 2/3 of the houses himself; half of those are on speculation and half are custom homes. Other contractors are building the rest, with only about 10% of the homes owner-built. The houses are not large, varying in size from 900 to 2,100 square feet, with the average house about 1,400 square feet. They range in price from $31,000 to $75,000, and if this definition of middle income housing causes raised eyebrows, it must be realized that these prices are competitive with other new housing in the Davis area, and that this whole venture was launched and is succeeding during some of the greatest inflation in building costs in history.

Houses over $50,000 take three to four months to sell; for the ones under this amount there is a waiting list. But the profit margin on the lower priced houses is small, and in effect they are subsidized by the sale of the more expensive homes. Although Corbett is both developer and builder, he is very careful to keep the sale of lots separate from the sale of homes. Homes are financed by individual construction loans, but an occasional cost over-run on a house must not affect the balance sheet for the development. Says Corbett: "If this idea is ever going to be replicated elsewhere, it is absolutely essential that this first development be profitable."

Design Features

The alternative energy and conservation features of the houses are evolving as the building goes along. Not all of the early houses have solar hot water heating, but on the later ones it is now standard. Public acceptance had a lot to do with it, as Village Homes designer John Hofacre explained: "A year ago we could hardly sell solar hot water heating, but now there's a big demand." Hofacre attributes this change to higher utility bills, increased public awareness of the finite nature of natural resources (California's two year old drought has been a considerable consciousness raiser),

One thing your typical subdivision doesn't require is a scale model of each house before it is built. Project designer John Hofacre uses the models to make sure the roof line or height of one house won't be shading the solar collector of the house next door.

and plain old peer group pressure. "When you walk down the block and notice that every house on it has a solar collector, you want one too," said Hofacre.

Davis' climate makes it essential that building design and hardware work both for summer cooling and winter heating. Mild winters bring only occasional freezing and an average temperature during December and January of 45° F. The average summer temperature for the hottest month is only 75°, but this figure alone is misleading. Afternoon coastal breezes can easily cool a 95° high to a 55° low at night, but whenever these winds fail, the summer high can go to 110° and the low to only 70°. In other words, summer nights are cool, but the days are hot.

Because of design features that include tile roofs, good insulation, light colored exteriors, minimal east and west windows, and overhangs to keep the summer sun out of southern windows, Village Homes requires no energy for summer air conditioning. Because of the mild winters, passive solar space heating works well. A tile floor that soaks up winter sun through southern windows all day and then re-radiates that stored heat at night is a good example. In Davis a properly designed and insulated house can provide 40 - 60% of the total winter heating needs. The more expensive active solar space heating systems using solar panels or other hardware are capable in Davis of providing 60 - 70% of the total winter heat.

The added cost of these energy saving and energy collecting extras for a 1,400 square foot house are shown below.

- $1,500 for solar hot water
- 700 for double-pane glass in windows
- 50 for R-25 insulation in the roof (more than if the normal R-19 thickness was used)
- 500 for better quality aluminum sash window frames, which don't leak air at the joints
- 10 for insulation of the hot water lines in the concrete slab floor
- 2,400 for the tile floors or water-filled drum-walls of a passive solar space heating system. This figure also includes the cost of a natural gas forced air back-up heating system, although some of the newer houses are using wood stoves for back-up systems, which are considerably cheaper.

or

- 5,000 for an active solar space heating system.

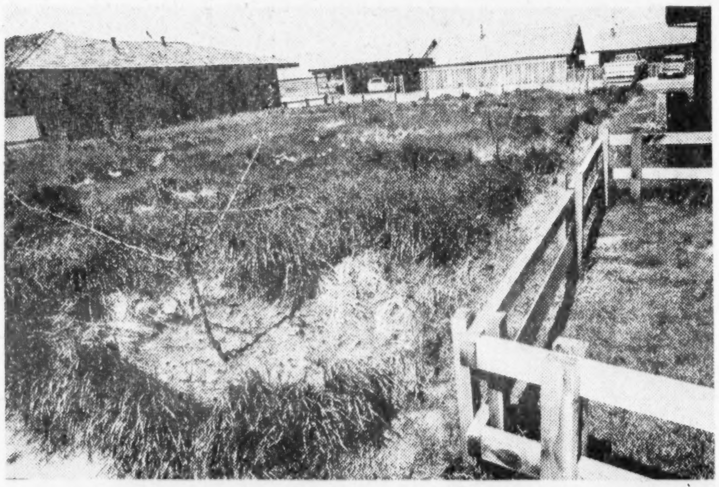
There is no extra cost involved in using water-saving toilets and shower heads, or in properly aligning the house to face the south.

Solar Rights

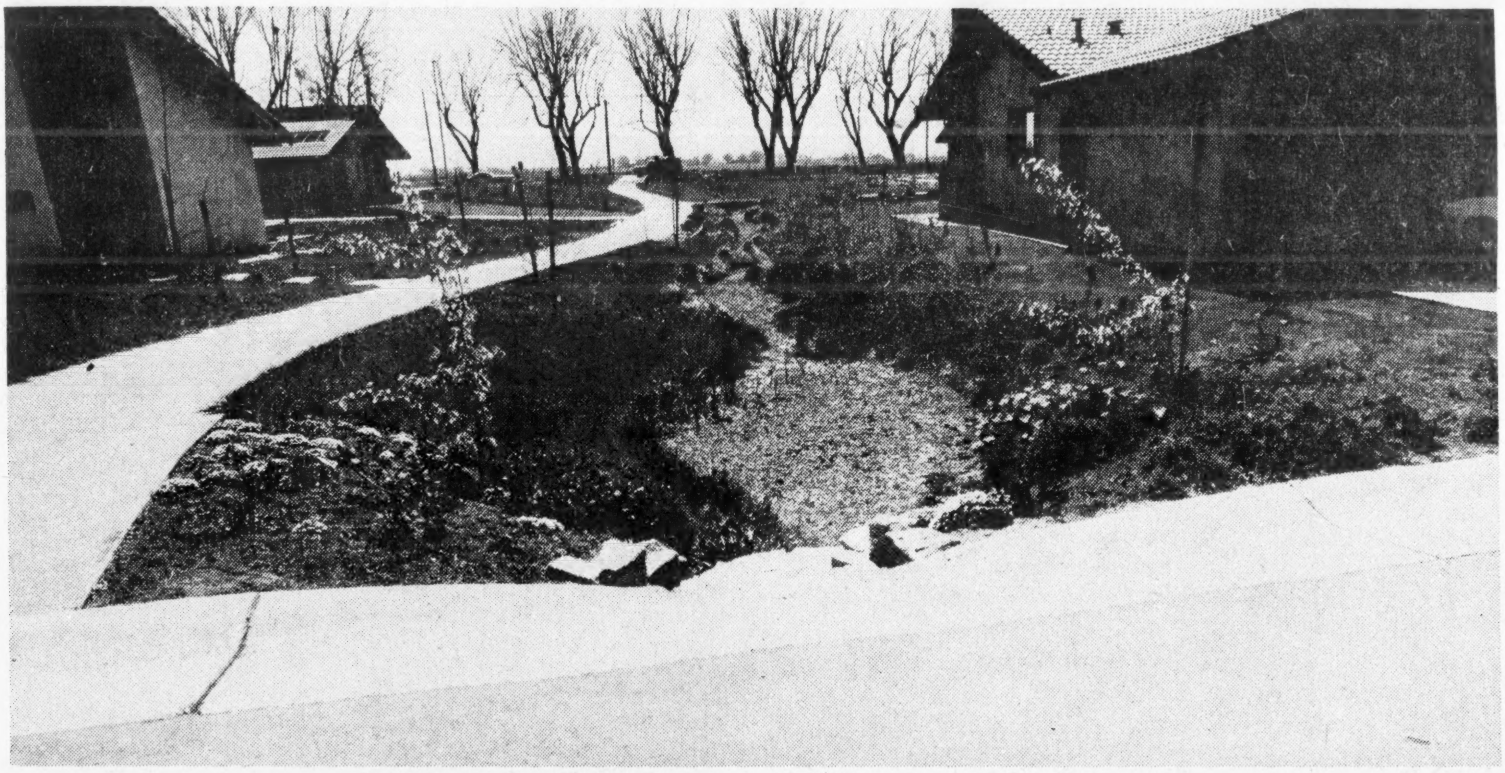
One of the considerations still being worked out by the Homeowners Association at Village Homes, and by the city of Davis, is solar rights. You spend the extra money for solar collectors and double paned glass and six months later your new next door neighbor decides to plant a row of poplar trees. What, or who, gives?

The formulation under discussion in Davis would say that nothing can shade any of the south-facing glass or solar collectors on a house for more than 40% of the total hours each day that the sun could fall on them. This 40% figure is further broken down to 20% in the morning and 20% in the afternoon, and it can only be the early morning and late afternoon sunlight that is blocked, in other words, when the shadows are longest. These early and late rays hit any window or collector at quite an angle anyway, and many of them will be reflected away rather than penetrating. What it is crucial to preserve are the midday hours of direct sunlight. With such a regulation in force, it is easy to visualize a lot of tree pruning and clock watching going on each year around the time of the winter solstice.

Village Homes has expanded the horizons of the Davis city government and regulatory bureaucracy, and has managed not to alienate them. The same is not true



The notion of a vacant lot implies that if it is physically possible to build on it, then inevitably someday somebody will. This is a lot, but it is not vacant. It contains an orchard of apricot trees, and they belong to the community. You may not get to know your neighbors here when it is time to prune the trees, but when the fruit is ripe you're bound to.



Most subdivisions begin with land leveling and the installation of streets, sidewalks, gutters and storm drains. Rain that falls on the street is collected and carried away in expensive buried pipe. Here the lay of the land – the natural watershed system – is preserved. The gutter of this street dips to let runoff flow into this small creek, where it can soak back into the earth. These waterways are designed so that most of them will dry up every third day (during the rainy season) to discourage mosquitoes from breeding. Where this doesn't happen, fish will be used to control the larvae. Should all of the waterways fill, they will then flow into an emergency inlet into the existing city storm drain system before they can overflow. In a drought year like this, that would be a welcome sight indeed.

of the Federal government. Village Homes is not approved by the FHA for government supported low-interest housing loans. In seeking FHA approval from the Department of Housing and Urban Development, Mike Corbett ran into a bureaucratic stone wall.

In previous interactions with local governmental and lending regulations, Corbett has negotiated, educated and compromised. On rare occasions, he has ignored the rules. For example, the showers in his newer homes have two drains in the floor and a switching valve. One goes into the sewer; the other into a pipe and outside for grey water irrigation. It's strictly illegal, but the new owner won't have to jerry-rig a system or use buckets to keep his trees alive the way thousands of people throughout the west are doing this year. Changing the rules only after so many people have broken them that it has become a farce does not particularly enhance the integrity of government.

The FHA had lots of objections to the plans for Village Homes. They didn't like the parking bays and they thought the lots should be laid out radially to the curving streets – the way it is normally done – which would have made the uniform south-facing alignment of all the lots impossible, in effect scuttling all of the energy-conserving design features with one single requirement. This quotation from a regional FHA official to Mike Corbett is typical: ". . . the maintenance of horses, poultry or other farm animals in the subdivision area is incompatible with the desires of typical homeowners and would exercise an adverse effect on the future marketability of properties."

Corbett smiles as he recounts the hassles. The irony is that his subdivision is not that revolutionary really; 90% of it is due to the premeditated application of common sense. He has buyers, and plenty of visitors stopping by for a look. And the housing industry has an example of how future suburbs might be done a little differently. ■

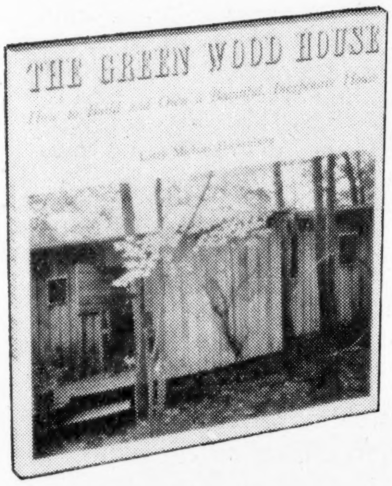
Instead of backyards with fences running the property lines, Village Homes provides a common area to be shared by every eight houses. The backyard of each house abuts this 1/3 acre space, which also contains the bike path. Neighbors decide how the common land will be used. If they opt for some chickens and goats, that's fine. Backyard sun-bathing in your birthday suit may also involve community consent. Notice the concrete tile roof. Initially it costs twice as much as asphalt shakes, but it is light colored (reflecting the summer sun and keeping the house cool), American made, and will last 100 years.

The Green Wood House

Unseasoned rough cut wood is available almost everywhere with a bit of searching, it is dirt cheap, and because you lose nothing to the planer it is stronger than dimensional lumber from the retail yard. This book tells you how to build with green oak for much less than you would ordinarily pay for spruce or fir. It contains specially formulated joist tables for hardwood, and clearly describes framing and construction techniques, which take advantage of oak's strength. Larry Hackenberg has also devised nailing methods and schedules that accomodate the natural shrinkage of unseasoned wood so that the lumber does not split or crack while drying and the wood draws together as it contracts.

Although some of the architectural drawings are not as clear as they might be (particularly the floor plans) the general approach to design seems to have been influenced by Ken Kern and features an open use of space with good convective patterns. The photographs illustrate an imaginative use of the texture and solidity of the building material. This is the only book I know of that even mentions the peculiarities of building with rough sawn green lumber. The perfect companion for an Alaskan mill.

—Len Gilday



The Green Wood House
(How to Build and Own a Beautiful, Inexpensive House)
Larry Michael Hackenberg
1976; 135 pp.

$4.95 postpaid

from:
The University Press of Virginia
Box 3608
University Station
Charlottesville, VA 22903
or Whole Earth

Always pay for your lumber with cash. Backyard sawmills, especially, often distrust checks. Never ask to have lumber on credit or make only a partial payment. These mills are not geared up for retail trade, and they often don't have the bookkeeping systems to keep up with small accounts. Remember this is not a retail operation — he is doing you a favour to sell you the lumber.

•

A house should be designed not for what your life is but, rather, for what you want it to become.

•

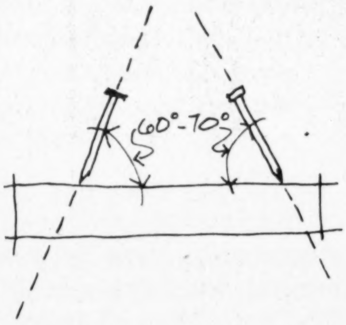
Golden Rule Number 1: Never use lumber that is wider than 6 inches. Obviously, the narrower the piece of wood, the less likelihood of finding extreme mixed graining. However, never use less than 1"-thick lumber.

•

Golden Rule Number 3: If you are not sure how many nails to put in a board, always put in too many rather than not enough. Nail the hell out of everything. If it moves, kiss it, if it doesn't move, nail it, except larger pieces of wood: 4 X 4 and larger, especially if these members are columns which carry load. Nails in these situations will tend to encourage excessive checking. It is better to carriage-bolt heavy structural members together and to nail only as few times as absolutely necessary.

•

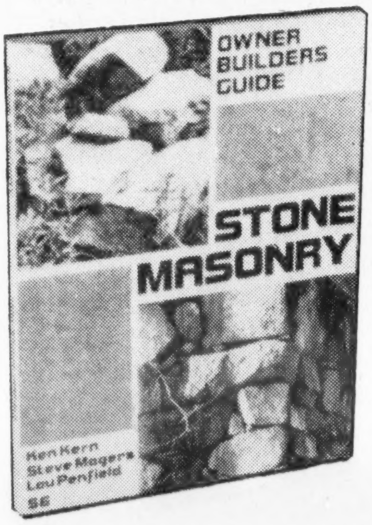
Each nail must be driven at an angle of 60° to 70° up from the face of the board and pointing toward the edge of the board. This is very important because it allows the board to shrink and pull the nail slightly without splitting the board in the center. If the nail is perpendicular to the face, the nail will hold so tightly that as the board shrinks it will pull itself apart in the middle and leave big ugly cracks.



Stone Masonry

Would you believe that the best most comprehensive book on building with stone would have Ken Kern (of The Owner-Built Home*) involved in there someplace? Well, the old master is at it again (with worthy friends) and the result is a joy to behold. As you might expect, esthetics is held to be as important as structure. Also expected and delivered are chapters on both dry and mortared technique, facings, and formed work. With the renewed interest in building with natural materials, this is all just in time. With photographs of everything. And these guys have more books coming in this series. We'll keep you posted.*

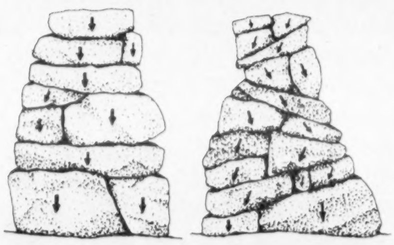
—J. Baldwin



Stone Masonry
Ken Kern, Steve Magers, Lou Penfield
1976; 192 pp.

$6.00 postpaid

from:
Owner-Builder Publications
Box 550
Oakhurst, CA 93644
or Whole Earth

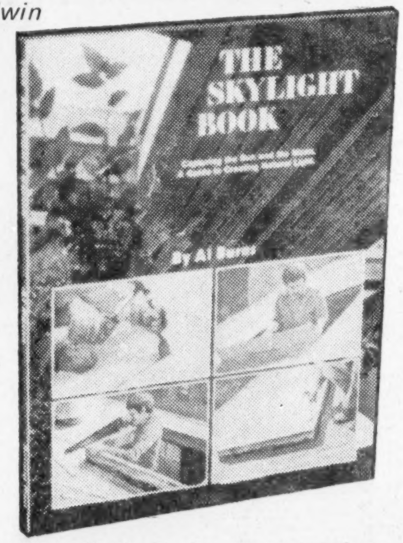


The *first rule* of stone masonry; always provide a firm, flat bed for each stone to be laid in place. It could be said that masonry is the process of preparing a bed for the next stone to be laid.

The Skylight Book

There are a lot of nifty things you can do with a skylight, but if you don't want to get wet, you'd better know what you are doing before you make the gaping hole in the roof. Absolutely everything you need to know is shown here, and very nicely too. Pass the saw, it's time we got some light into this dump!

—J. Baldwin

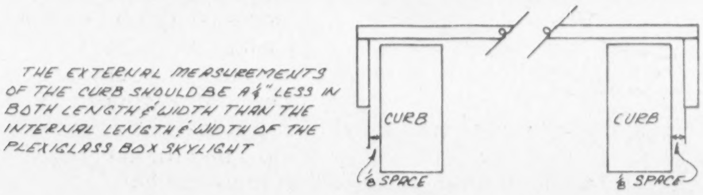


The Skylight Book
(Capturing the Sun and the Moon, A Guide to Creating Natural Light)
Al Burns
1976; 111 pp.

$5.20 postpaid

from:
Running Press
38 S. 19th St.
Philadelphia, PA 19103
or Whole Earth

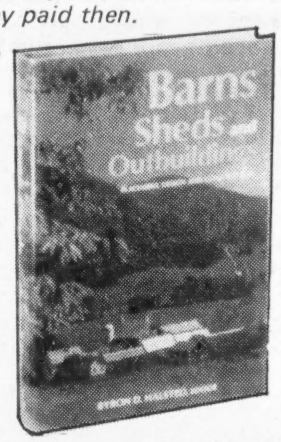
When you are working on your skylight, try to do as much as possible from the inside. If you are working above the attic you can build a work platform on the ceiling rafters. And if you are working in an open, high-ceiling area within the house, you can build or rent a scaffold. Should you have to go over 10 feet high, I would recommend renting a scaffold. It is relatively inexpensive and makes the job much easier.


THE EXTERNAL MEASUREMENTS OF THE CURB SHOULD BE A ¼" LESS IN BOTH LENGTH & WIDTH THAN THE INTERNAL LENGTH & WIDTH OF THE PLEXIGLASS BOX SKYLIGHT
CURB
CURB
⅛ SPACE
⅛ SPACE

Barns, Sheds and Outbuildings

Old-timers to learn from are getting hard to find but they're not all dead. This one, born in 1881 is still alive and kicking. He knows about how to build an ice-house, a cool-room, and a Swiss birdhouse, among other things. Root cellars too. Though the book is intended as an instruction manual of basic designs, I found it reasonable to sit right down and read the whole thing through as if it were a novel, which it sort of is. The pay scales are a little off for today's labor market, though; a dollar a day is what they paid then.

—J. Baldwin



Barns, Sheds and Outbuildings
Byron D. Halsted, Ed.
1881, 1977; 240 pp.

$6.95 postpaid

from:
The Stephen Greene Press
P.O. Box 1000
Fessenden Road
Brattleboro, VT 05301
or Whole Earth

Ice should be cut with a saw, not with an axe, into blocks of regular size, so that they will pack into the ice house solidly and without leaving spaces between them. If cut in this manner, ice will keep perfectly well, if not more than three inches in thickness; but a thickness of six inches at least is preferable. It should be cut and packed in cold, freezing weather, and if, as it is packed, a pailful of water is thrown over each layer to fill the spaces between the blocks, and exclude the air, it will keep very much better than otherwise. For a day or two before the house is filled, it is well to throw it open in order that the ground beneath it may freeze, and it may be left open for a few days after it is filled, if the weather continues cold. The ice house should be finally closed during cold, dry weather. There are some general principles to be observed in the proper construction of any kind of ice house, and all else is of secondary importance. There must be perfect drainage, and no admission of air beneath, ample ventilation and perfect dryness above, and sufficient non-conducting material for packing below, above, and around the ice, by which its low temperature may be preserved. The best packing consists of sawdust, either of pine, or hard-wood, spent tan, charcoal powder, or what is known as "braize," from charcoal pits or store houses, and oat, wheat, or buckwheat chaff, or marsh hay.

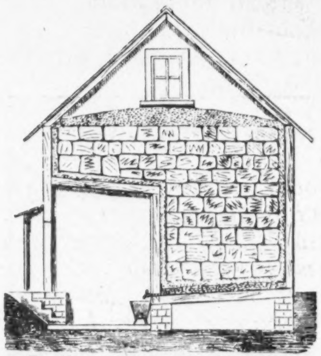


Fig. 160.—ICE HOUSE AND REFRIGERATOR.

Thermal Efficiency Construction

Fat Walls. That's what it amounts to. But as anyone who has built a double-walled box can tell you, making a fatwall structure isn't as easy as one might hope. Mr. Bentley has all the details figured out and has printed them up in a book he publishes himself. It would not be nice of us to show details of the method and he has asked us not to. We can say that the construction method, which utilizes simple built-up beams instead of the usual 2 X 4 framing, should result in a good house with very low uncontrolled heat loss or gain. Such a house would make solar heating a much more economical proposition. Patent Pending.

—J. Baldwin.

Thermal Efficiency Construction
Richard P. Bentley
1975; 95 pp.

$15.75 postpaid
(includes a license for constructing one house)

from:
Richard P. Bentley
Box 786
Tupper Lake, NY 12986

Building Value

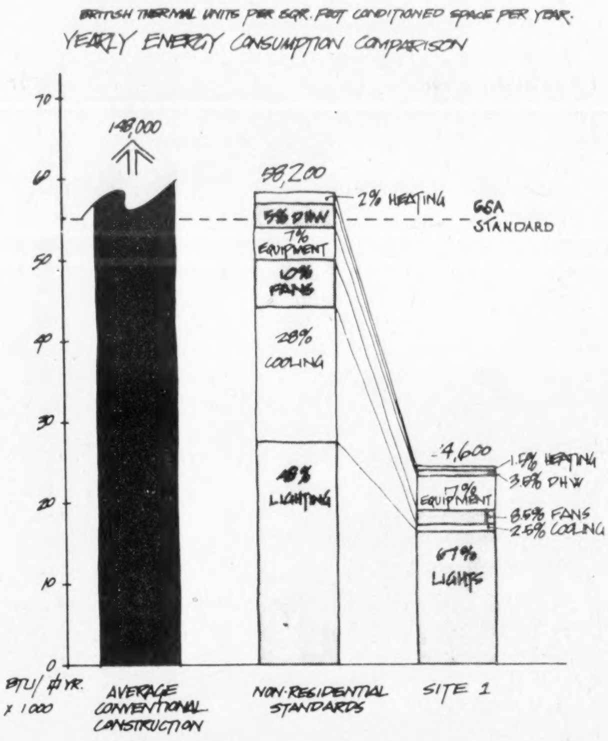
California's State Architect, Sim Van der Ryn, has been shaking things up in Sacramento in a way not often seen. From his office has come an architectural philosophy that isn't mere political hoorah. Believe it or not, the state of California actually has an official energy-in-buildings policy. **Building Value** *presents the guidelines and the reasoning behind them.* **New State Office Building** *is proof of the pudding; it shows the design of a structure that will be built according to the energy saving guidelines. The basic principles, of course, could apply in many other states. I find this demonstration of leadership encouraging.*

—J. Baldwin

Building Value
(Energy Design Guidelines for State Buildings)
Office of the State Architect
1977; 99 pp.
$3.25 (limited quantity left)

New State Office Building
(Eighth & P Streets, Sacramento, California)
Office of the State Architect
1977; 122 pp.
Write for price

both from: Rita Hauf
Office of the State Architect
P.O. Box 1079
Sacramento, CA 95805



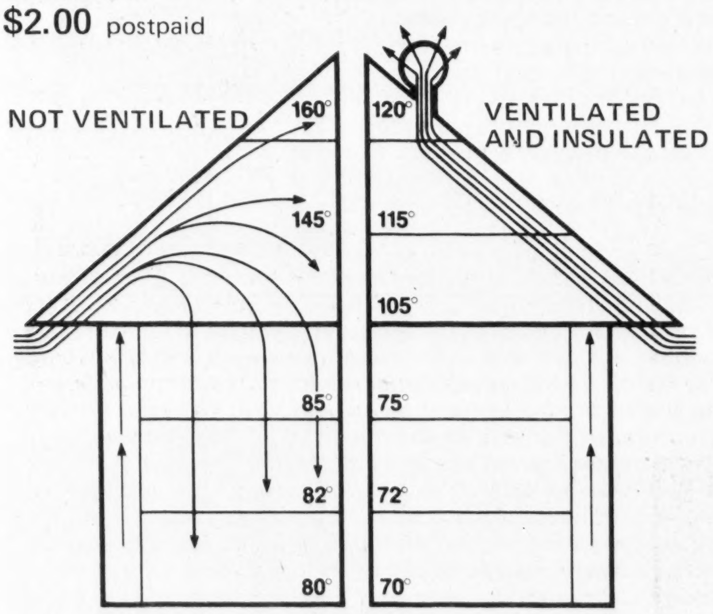
The Handbook of Moving Air

The ventilation professionals show how to control the air circulation in your humble abode. They cover both nature-powered methods and equipment as well as mechanical. An architect's office would probably wish for more engineering features, but this paper will do just fine for most of us. The material is not copyrighted; a commendable attitude.

—J. Baldwin

The Handbook of Moving Air
(A Compilation by The American Ventilation Association)
Harrison A. Dunlavy, Ed.
1976; 55 pp.
$2.00 postpaid

from:
American Ventilating Assn.
P.O. Box 7464
Houston, TX 77008



The important part of this sketch is that it shows a hot attic causes a hot ceiling which causes a hot living area.

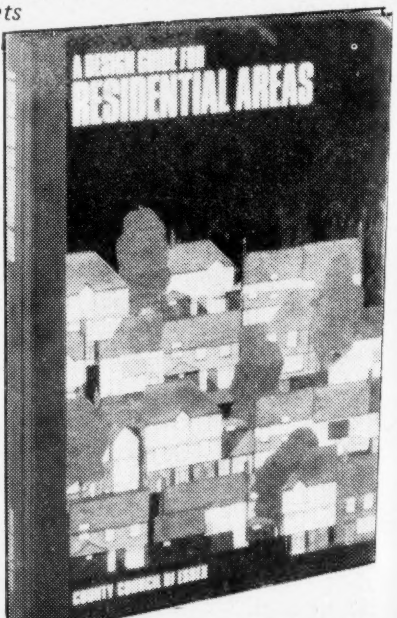
•

The every day process of living in the home generates surprising quantities of water vapor. Cooking, bathing, washing clothes or dishes, all add water vapor to the air. Each member of the family contributes from 1-1/2 to 2 lbs. of water vapor each day. The total water vapor by a family of 4 living in a modern home adds up to 150 lbs. or 18 gallons per week.

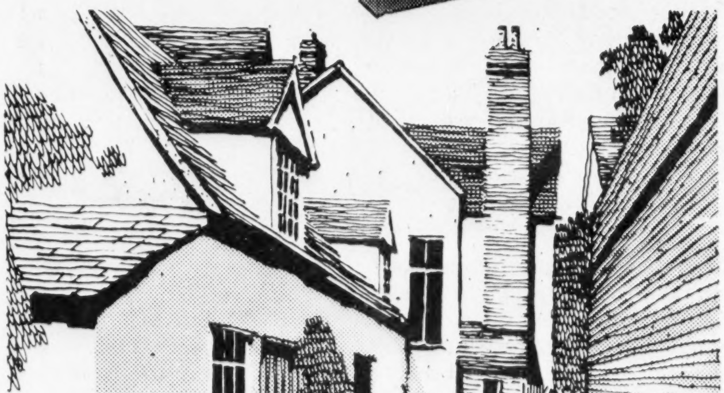
A Design Guide for Residential Areas

This is one of the first critical examinations of suburbia and resulted in changes designed to improve the visual, physical, and social environment. Streets were reduced, lots were oriented better, and an integrated approach was laid out. It was a beginning — much more should be done.

—Dave Bainbridge



A Design Guide for Residential Areas
County Council of Essex
1973; 134 pp.
£4.50 ($7.52) postpaid
from:
Essex County Council
Planning Dept.
County Hall
Chelmsford CM1 1LF
England



2.13 g Traditional urban privacy achieved by 'design'

SUN Catalog

For a tour-de-force of conflicting claims, this catalog is hard to beat. It's probably worth looking at just to get an idea of the wide range of available equipment. Though principles are explained, no help at all is given in making a brand choice. Manufacturer's claims are presented verbatim without comment. Caveat emptor for sure.

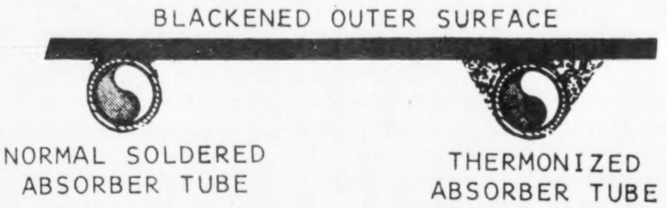
—J. Baldwin

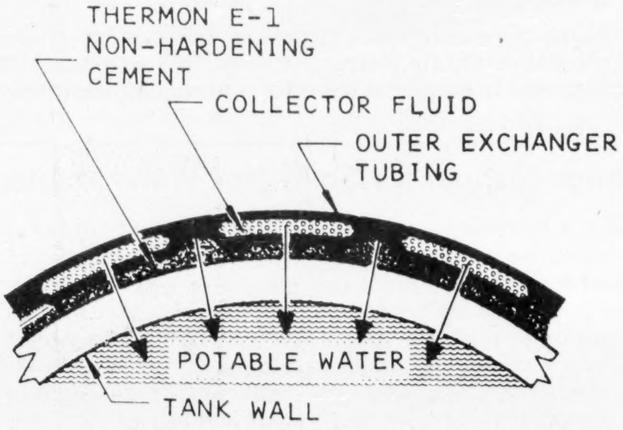
1977 SUN Catalog
127 pp.
$2.00 postpaid

from:
SUN
Box 306
Bascom, OH 44809

THERMON HEAT TRANSFER CEMENT

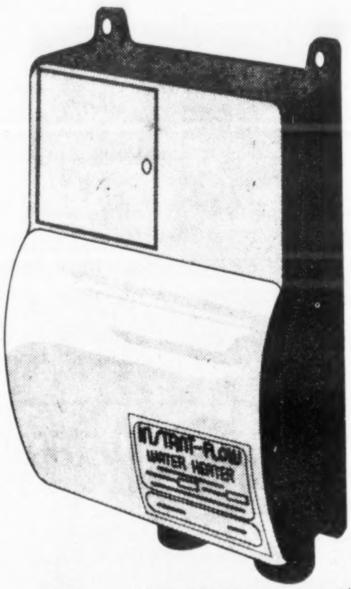
Thermon Heat Transfer Cements are heavily Carbon-Laden, resulting in a Thermal Conductivity Rating of 90 to 110 BTU/Hr/SF/F°/Inch. For Use with All Metals.





THERMON E-1 NON-HARDENING CEMENT

PINT CAN	#7011-P	$7.00
QUART CAN	#7011-Q	$11.90
GALLON PAIL	#7011-B	$36.00
5 GALLON PAIL	#7011-C	$170.00



INSTANT-FLOW WATER HEATER

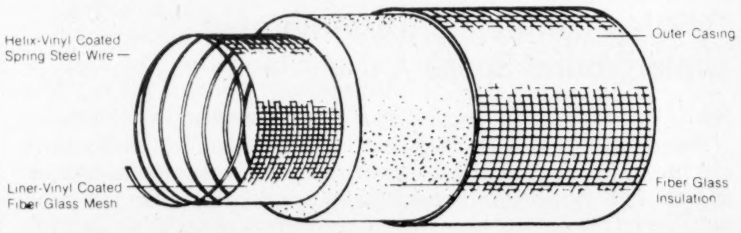
The inlet connects to the cold water supply, and the outlet to the tap. And the heating element is connected to the required power source.

Inlet cold water is heated as it flows across a coiled wire resistence element inside a W-shaped, injection-molded Lexan tube. Power to the heating element is turned on and off as the tap is opened and closed.

CAT#	APPLICATION	W/V/A	RISE @ 1 GPM	PRICE
#6023	Wash Sink	2300/220/10	19°	$79.50
#6025	Kitchen	3000/220/13	22°	$79.50
#6027	Kitchen	4600/220/20	30°	$79.50
#6029	Washer	6000/220/27	45°	$82.00
#6031	Bath,Shower	9000/220/40	72°	$83.50

Maximum heating temperature 190° F.

INSULATED FLEXIBLE AIR DUCTING


Helix-Vinyl Coated Spring Steel Wire
Outer Casing
Liner-Vinyl Coated Fiber Glass Mesh
Fiber Glass Insulation

Duct size ID	Cat. no.	Price per ft.
6"	#3760	$2.18
8"	#3761	$2.73
12"	#3762	$4.10
16"	#3763	$5.70

Alternative energy mini-grants

Alternative Sources of Energy Magazine has dipped into its savings accumulated over a five and one-half year history and decided to give away over two-thousand dollars to individuals and groups needing money to research and develop projects relating to alternative technologies. This kind of seed money is desperately needed by the hundreds of small groups and individuals in homes, small shops and businesses, farms, garages, and backyards around the world. **Alternative Sources of Energy Magazine** is committing itself to supporting this kind of decentralized activity.

The grant program offers small grants, generally around $200 for projects relating to alternative technologies. The paperwork is kept to a minimum. People are simply asked to send to **ASE** a short description of a proposal's project, giving its purpose, outline, timetable, and funding requirements plus biographical information on those submitting the proposal. A review panel will rate each proposal and on the basis of its technical merit, reasonableness of the funding requirements, and the competence of the proposers, award funds to those in need.

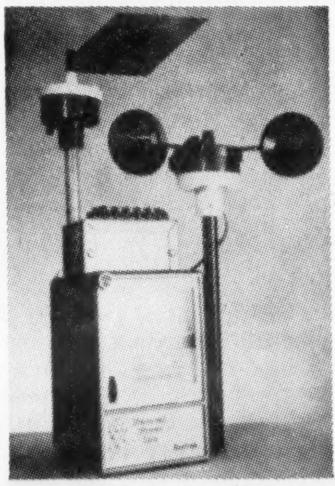
Alternative Sources of Energy Magazine
Route 2
Milaca, Minnesota 56353

Natural Power, Inc.

These people make a variety of equipment useful to people interested in wind power. What attracted me to their catalog is the fact that they will rent the sophisticated equipment you need to hard-assedly check out your site to see if a wind machine will pay its way. They have towers, specially wound alternators, and solid state load switches that dump generated power into other loads when your batteries are full.

—J. Baldwin

Natural Power, Inc.
Catalog
$1.00 postpaid
from:
Natural Power, Inc.
New Boston, NH 03070



◀ *12-volt anemometer recorder with wind direction*

Purchase, $760.
Lease, $140/2 months.

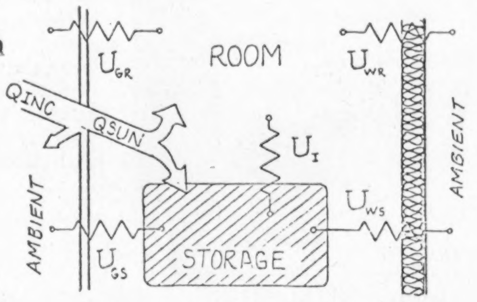
New Mexico Solar Energy Association

It might surprise you to know how much of the good solar work is being accomplished by the members of NMSEA. They talk shop in their Bulletin and in their journal, **Sunpaper**. *Those of you who have progressed beyond Alternative Energy dilettantism will find a lot to chew on here. You have to be a member to get the publications, which are included in the modest membership fee.*

—J. Baldwin

New Mexico Solar Energy Association
Membership
$10.00/year
for individuals

from:
NMSEA
P.O. Box 2004
Santa Fe, NM 87501



Passive Solar Heating Model

Summary of Results

In order to help identify the potential for passive solar heating of buildings, a very simplified dynamic simulation model was coded for the computer. The code was then run with hourly solar radiation and weather data as input and the overall performance was determined for a one-year operation. The calculation was repeated many times with different parameter selections. The results help to identify some important considerations in the design of passive systems to obtain best results. Four preliminary conclusions are particularly striking:

(1) For the same glass area, a performance comparable to that of a conventional active air or liquid cooled collector system should be achievable in an optimized design passive solar heating system.
(2) Much better performance can be achieved if storage is located so that it is directly heated by the sun rather than indirectly heated by sunlight absorbed within the heated space.
(3) Storage mass is much more important in a passive solar heating system than in the conventional active system. The "knee of the curve" is at roughly twice the storage heat capacity, that is, at 30 BTU/ft^2 of glass/° F for a passive system, rather than at one-half this value in an active system.
(4) Storage should be partially decoupled from the heated space (provided storage is directly heated by the sun as recommended in Item 2, above). In fact, there exists an optimum thermal coupling of roughly 1.5/ft^2/° F/hr.

A more sophisticated model of a "Trombe wall" has also been coded in order to study the time dependent diffusion of heat through a concrete wall exposed to sunlight. An additional conclusion of this preliminary analysis is as follows:

(5) The low thermal conductivity of concrete results in high daytime outside surface temperatures and therefore a decreased effectiveness of the wall as a combined absorber-storage medium. A high conductivity, high specific heat material (such as water contained in cans) will have a much better performance.

Although these conclusions are fairly obvious (particularly in retrospect) it is quite instructive to be able to express them qualitatively in graphical form for a particular location.

Development and Utilization of Underground Space

*While some of us are exploring living underground (***CQ** *Fall '76 and Spring '77 and* **Popular Science** *April '77) the heavies are looking at the possibilities of locating industrial activities there. This symposium specifically concentrated on utilizing exhausted limestone quarries underlying Kansas City, but of course much more general topics were discussed too. I suspect we are seeing the beginning of a trend. And I like reading about things I know* *nothing* *about.*

—J. Baldwin

Proceedings of the Symposium on the Development and Utilization of Underground Space
Truman Stauffer, Sr.,
Jerry D. Vineyard, Editors
1975; 196 pp.
$7.75 postpaid

order:
No. PB252812
NTIS
5285 Port Royal Road
Springfield, VA 22161

There may be some medical surprises, such as the apparently low susceptibility of underground workers to the common cold and to other trivial ailments which account for so much loss of labor under normal working conditions. The seemingly small accident rate among underground workers (as distinct from the actual processes of mining) suggests that the subterranean location may provide some security from accident-proneness, by reason of the possible 'shielding' effects of the earth from general solar influences and sun-spot responses.

The Swedish experiences may be of the greatest value in providing comparative statistics between surface and subsurface industrial operations, since I believe that their medical records are more extensive and more closely analyzed than those recorded in other countries.

The British medical records of wartime underground operations, both industrial and civilian should be reconsidered, together with those of certain spectacular conditions such as those which prevailed in the caves of Naples and in particular cities of Vietnam where whole populations were forced, suddenly, to maintain themselves as troglodite communities.

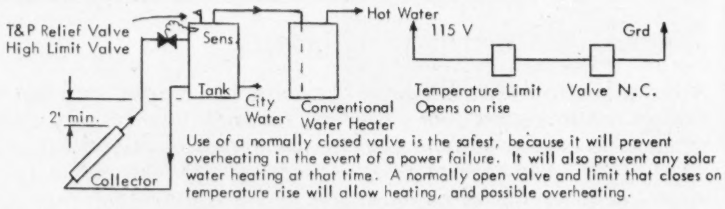
Design Manual for Solar Hot Water Heaters

This is a half-manual; it doesn't tell you how to make any of the equipment. But it *does* *tell you how to choose and size it, and it is the only* *place* *I've seen some of the necessary calculations for such items as the space allowance for expansion as the water heats up. You needn't be a graduate engineer to make use of the information either. Pickynits will be put off by some of the shortcuts shown, but experience has shown that they are as accurate as the available hardware specifications and weather data. Funk-remover!*

—J. Baldwin

A Design Manual for Solar Hot Water Heaters
Horizon Industries Staff
1977; 40 pp.
$5.00 postpaid

from:
Horizon Industries
12606 Burton St.
North Hollywood, CA 91605



Use of a normally closed valve is the safest, because it will prevent overheating in the event of a power failure. It will also prevent any solar water heating at that time. A normally open valve and limit that closes on temperature rise will allow heating, and possible overheating.

Thermosyphon Water Heater

A certain amount of overheating will occur, if there are several clear days in a row. Some of this energy can be accomodated by setting the tank temperature limit above the desired hot water temperature. The setting of the limit must never exceed the working temperature of any of the system components. Direct systems are also limited to about 180 F. to prevent scalding and limit scaling. Any unpressurized tank is limited to the boiling point. Sealed indirect tanks should not be operated at too high temperatures. Any sealed vessel, containing water, that is heated, represents a possible explosion. Because solar heaters have large quantities of water close to inhabited areas, the danger is more acute. Lower temperatures, and the lower pressures that they permit, help to reduce the danger. The location of the storage tank can also have a considerable effect on the safety of the installation. If the tank is installed next to an outside wall, and an explosion occurs, the wall will burst, allowing the force to dissipate. In contrast, if the tank had been located near the center of the building, major damage might have occured.

Unbuilt America

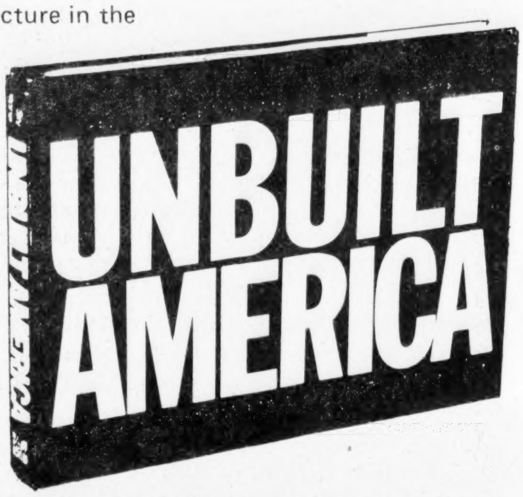
"Fascinating" is a word beaten plumb to death these days, but that's what this book is alright. I mean . . . these people were serious. They spent hours, days, and sometimes lifetimes trying to get these architectural fantasies accepted and built. The score seems to be 50% thank God they didn't do it, and 50% too bad they didn't. And of those, well, might be we still could? Anyway, step right in and get your mind joggled up. Surprisingly inexpensive book considering the excellence of the presentation.

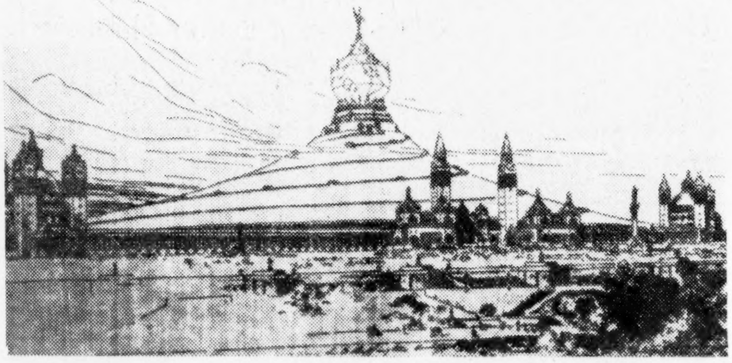
—*J. Baldwin*

Unbuilt America
(Forgotten Architecture in the United States from Thomas Jefferson to the Space Age)
Alison Sky & Michelle Stone
1976; 308 pp.

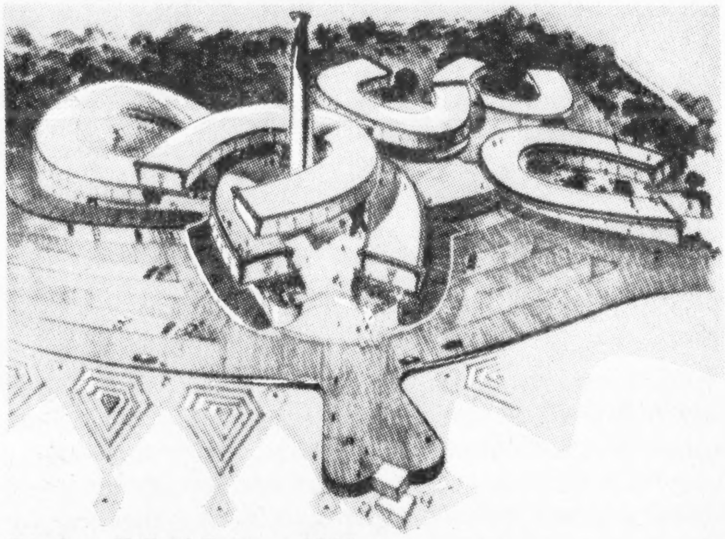
$14.95
postpaid

from:
McGraw-Hill
Book Company
Princeton Road
Hightstown, NJ
08520
or Whole Earth





Steel Tent (with spiral electric railways) — 1889
Location: Chicago
Status: Unbuilt proposal for Columbian Exposition



Cowboy Hall of Fame — 1960
Location: Oklahoma City.
Status: Unsuccessful competition entry.

The National Center for Appropriate Technology

The National Center for Appropriate Technology is now soliciting proposals for the establishment of regional newsletters which would deal with appropriate technology and its application to low-income communities.

The content of these newsletters might include:

- the historical and philosophical basis of appropriate technology
- project reports and case studies (NCAT funded and others)
- short descriptions of projects and news items with references for further information
- pieces on local and regional policy
- pieces on how appropriate technology can be a basis for community economic development
- news from NCAT
- letters and opinion pieces
- information on how to get grants
- networking information: including identification of people, events and projects, (maps showing location, etc.)

The National Center for
Appropriate Technology
P.O. Box 3838
Butte, Montana 59701

Energy For Man - (classic)

I sure am sick of reading energy books! (Blasphemy!) The only thing that keeps me wading through 'em is that once in a while an author has a different viewpoint. Mr. Thirring's viewpoint is commendable: the reader should understand the physical reasons for things as they are done, as well as the principles involved in choosing a better way. For instance, he shows why there is no possibility of a conventional automobile ever being better than 20% efficient (they're about 6% efficient now). You can then go far beyond merely howling that you don't LIKE cars, and you have a better chance of making some good alternatives happen. Some understanding seems likely to get you farther than vague suspicion.

The author must be feeling smug these days. He wrote this twenty years ago and most of it is still right on target. His predictions of solar and nuclear problems and advances are particularly sharp.

—*J. Baldwin*
[Suggested by Marvant Duhon]

Energy For Man
Hans Thirring
1958; 409 pp.
$15.00 postpaid

from:
Indiana University Press
10th & Morton Sts.
Bloomington, IN 47401
or Whole Earth

Energy-system Efficiency of the Motor-Car, in PerCent	*Efficiency of Each Step*	*Efficiency including all Preceding Steps*
Production of crude petroleum	96	96
Refining of petroleum	87	83·5
Transportation of petrol	97	81
Thermal efficiency of engine	29	23·5
Mechanical efficiency of engine	71	16·7
Rolling efficiency	30	5

●

Most of the recent attempts to find new methods for energy production from inexhaustible sources, like solar heat, wind, and tides, have been overshadowed by the advent of the atomic age. The expectation of obtaining cheap energy from nuclear fuels has a paralysing effect on the pursuance of other projects.

As regards efforts to live off income, mankind is in the situation of a carefree young man who for some time has been living well on a rich inheritance. Feeling that his wealth will come to an end, he is just about to find a job with a regular small income, but is stopped from doing so because of news telling him that a rich uncle is going to die. So we are stopping plans with solar and other power in the expectation that the uranium reserves on the earth will prove to be a new, rich heritage.

BURNING WOOD

BY J. BALDWIN

Shortages and high cost of conventional fuels have encouraged many people to turn to wood. Too many, probably, for this country's wood supply to service over the long haul unless disciplined forest management is practiced. This seems to be an unlikely prospect until there are shortages of wood too; cord-cutting is a quick profit business. It obviously takes a lot less time to cut and burn a tree than it takes to grow one. How many of you who burn wood plant trees? Of course, you can justify using "downed wood," but that is taking needed soil nutrients and it deprives certain wildlife of necessary shelter and food. You can burn "slash" cuttings and stumps left over from lumbering — but this is definitely a limited resource and it smacks a bit of secretly condoning the awful lumbering methods that result in slash. Rather like not thinking about where your hamburger really comes from. A great many wood-burning civilizations have completely destroyed their forests (old China, for example) and many others are well on the way (India and many South American countries.) In this country we plant approximately one tree for each one cut, so we aren't safe either. Wood may be renewable but it isn't inexhaustible unless managed. Even that holds a possibility of soil depletion over a long period of time.

Whether you are going to be honest about it and manage a woodlot (or buy from a managed lot), or whether you are going to transfer a fossil fuel attitude to wood burning and ignore the real issues as long as you are warm today, it will pay to use as little wood as possible. This means good insulation and a weather-tight building (rarely seen in a rural setting) and good equipment. Tradition isn't always a good indicator of efficiency either. Our forefathers saw the forests as inexhaustible and if their high ceilinged houses leaked a lot of heat, they just put on another log. Look at the gigantic size of many colonial fireplaces! Even the famous "Franklin Stove" is an energy hog, though Ben Franklin's original was not. What we have today are cheap imitations of the cheap imitations of his day. . . In any case, an in-

---

Wood Heat

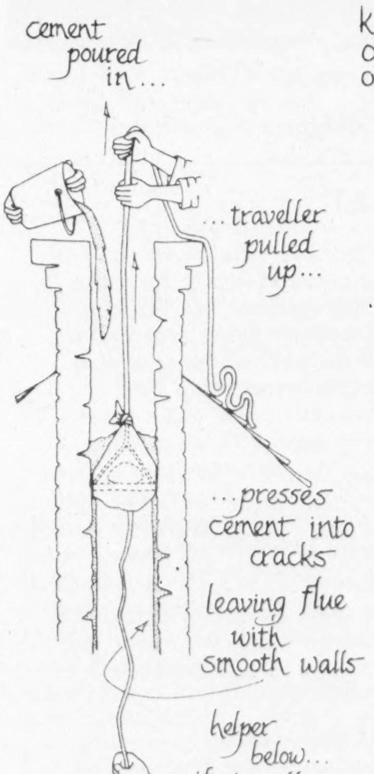
All those little things that other books assume you know, but probably don't, are worked at here, and probably illustrated too. There's a particularly good section on wood range cooking. Also very good is the discussion of procedures such as lighting up. There's even a plan for a flue fire alarm! I learned more from this very personal account than from anything else I've read on the subject.

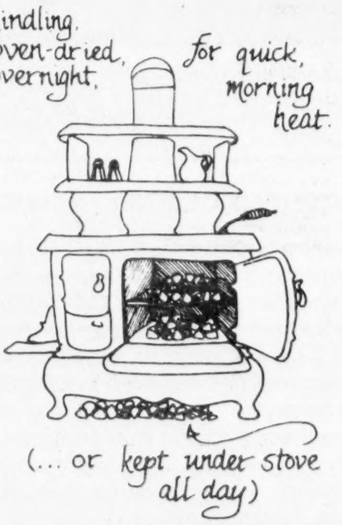
Wood Heat
John Vivian
1976; 320 pp.
$4.95 postpaid

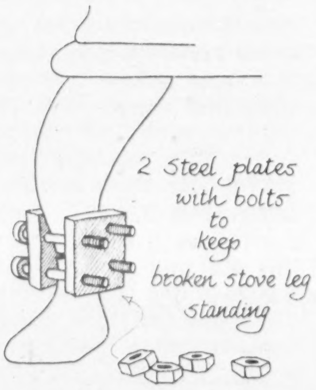
from:
Rodale Press, Inc.
33 East Minor
Emmaus, PA 18049
or Whole Earth

Wood Heat
By John Vivian

The older (and costlier) the stove, the more primitive was the casting technology of the time and the more likely you are to have warped plates. For really serious daily use, I just wouldn't buy an antique, warped or not. Any stove manufactured much earlier than 1860 belongs in a museum, I'd say. Too, I feel that most stoves built prior to 1900 just shouldn't be asked to go back to daily work. A lot of folks will disagree, including Richard "Stove Black" Richardson who runs the Good Time Stove Company on Route 112 in Goshen, MA and who knows more about old ranges and most other kinds of old stoves than anyone I know of, myself included by a long shot.


cement poured in...
...traveller pulled up...
...presses cement into cracks
leaving flue with smooth walls
helper below... if traveller gets stuck


Kindling, oven-dried, overnight, for quick, morning heat.
(... or kept under stove all day)


2 Steel plates with bolts to keep broken stove leg standing

J. has looked at everything available on wood heating (up to May 1977). Here's his pick. If something's not here, it's because he doesn't like it enough.

—SB

The lady is an Austrian stove. Sent by Dave Lyle.

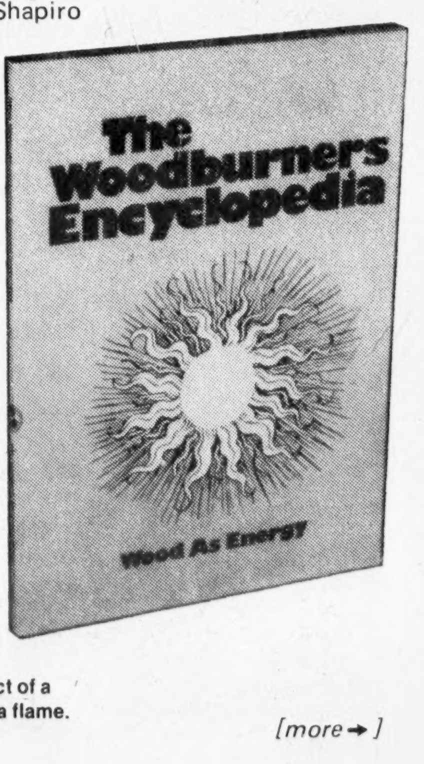
creased use of wood as fuel is going to add pressure to an already overloaded environment as the demand for trees increases and as air pollution is increased from the burning. Such concerns make wood burning not quite a simple fire in the fireplace on a rainy night.

In the hardware department also there is controversy. "My Ashley is better than your Trolla!" and every possible other combination of brand loyalty, myth, and unfounded claim is heard these days. Professor Jay Shelton, one of the authors of The Woodburner's Encyclopedia*, has actually run tests on many stoves under laboratory conditions in an effort to settle some of the arguments. I don't know whether he has settled them or not. Now I hear, "Yes, but his lab is different than my adobe," and like that. It's clear that there will have to be a lot more research if we are really going to know what we are doing. I'll guess that certain stoves are best for certain structures, weather, and wood type. Best is probably to ask around, as there are many local problems. For instance, did you know that burning driftwood just eats the hell out of steel stoves? The salt. (I can hear it now. . . "But our stove has been fed driftwood right here in Coos Bay for 35 years and it's just like new!") Ah well. Here are some books on the subject, and some stoves that our readers seem to like. We haven't had any letters on what readers dislike. Probably because it's too embarrassing to spend $300 on a turkey. For sure you should shop around. Many stoves are heavily discounted. And keep in mind what you're doing to our trees. . . .*

The Woodburner's Encyclopedia

I rate this the second (after **Wood Heat***) best overall book if you're just going to look at one. Jay Shelton's test findings are summarized here, which should help you decide at least what type stove to try. (His list of stove manufacturers and distributors is comprehensive.) Just about everything else you need to know about wood burning is covered too, including what little is known about environmental impact.*

The Woodburner's Encyclopedia
Jay Shelton and Andrew B. Shapiro
1976; 155 pp.
$6.95 postpaid
from:
Vermont Crossroads Press
Box 333
Waitsfield, VT 05673
or Whole Earth



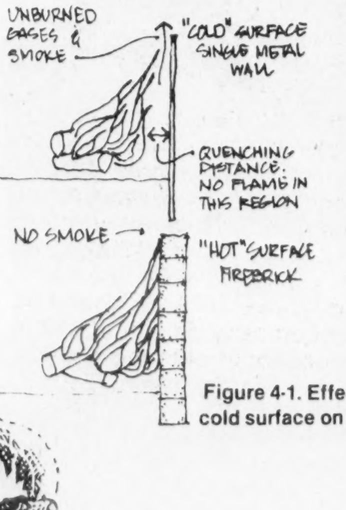

UNBURNED GASES & SMOKE
"COLD" SURFACE SINGLE METAL WALL
QUENCHING DISTANCE. NO FLAME IN THIS REGION
NO SMOKE
"HOT" SURFACE FIREBRICK

Figure 4-1. Effect of a cold surface on a flame.

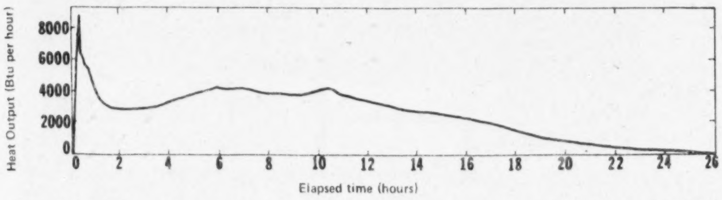


Figure 7-5. The heat output of a Jøtul 602 in a very low-power burn during a particular run. The initial sharp peak is due to the burning of kindling to generate some coals. After 20 minutes the stove was filled with about 18 pounds of red oak. The air inlet damper was then nearly shut, and no adjustments or wood additions were made for the rest of the burn. With so little air, the burn was a flameless smolder with a very low and steady heat output of about 3,000 Btu per hour; this is equivalent to about a third of the heat output of a top burner in a cooking range.

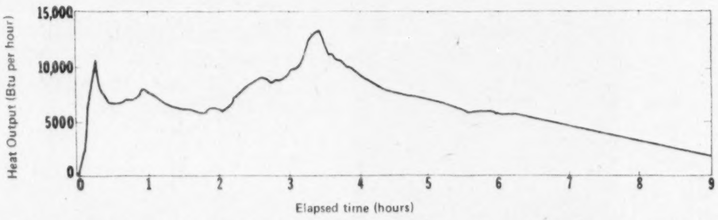


Figure 7-6. The heat output of a Jøtul 602 without its baffle plate during a particular run with one full fuel load at the beginning and no subsequent adjustments of dampers. The heat output is fairly steady, but less so than in Figure 7-5, probably due to the existence of some flames at this higher heating rate, and due to the absence of the baffle plate.[3]

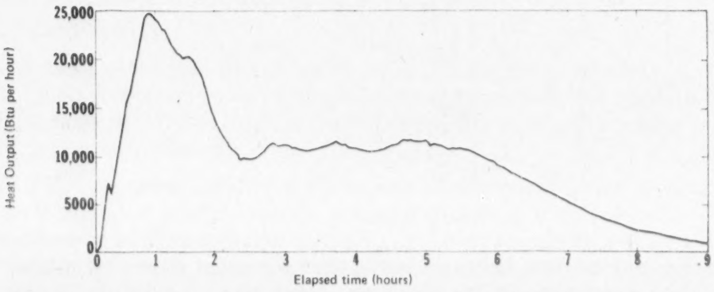


Figure 7-7. The heat output of a Morsø 2B stove during a particular run involving one full loading with fuel at the beginning and no subsequent adjustments. The surge at the beginning is typical when non-automatic stoves are operated at medium power, and probably corresponds to the burning of combustible gases, which are most abundant in the early portions of a fire.[3]

[more→]

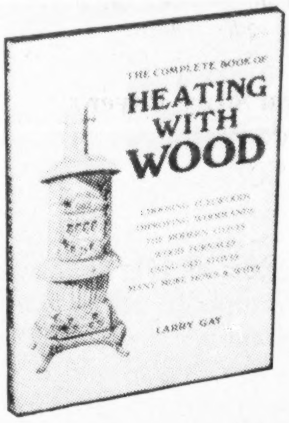
The Complete Book of Heating With Wood

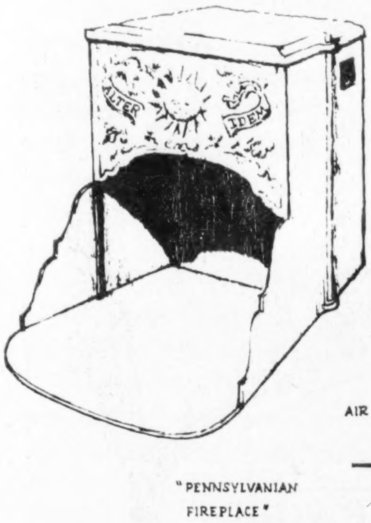
A more modest but quite complete book that has some coverage of older models not found elsewhere.

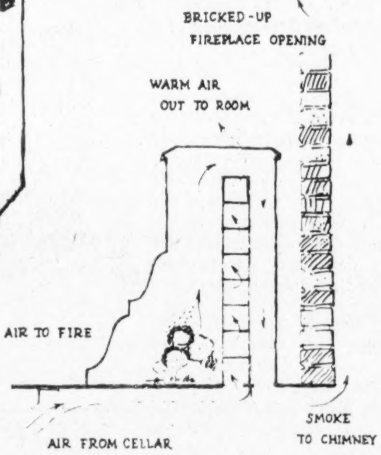
The Complete Book of Heating With Wood
Larry Gay
1974; 128 pp.

$3.95 postpaid

from:
Garden Way Publishing Co.
Charlotte, VT 05445
or Whole Earth


THE COMPLETE BOOK OF
HEATING WITH WOOD
LARRY GAY


ALTER
IDEM
"PENNSYLVANIAN FIREPLACE"


BRICKED-UP FIREPLACE OPENING
WARM AIR OUT TO ROOM
AIR TO FIRE
AIR FROM CELLAR
SMOKE TO CHIMNEY

Franklin's "PENNSYLVANIAN FIREPLACE"

"In common chimneys, the strongest heat from the fire, which is upwards, goes directly up the chimney, and is lost; and there is such a strong draft into the chimney, that not only the upright heat, but also the back, sides, and downward heats are carried up the chimney by that draft of air; and the warmth given before the fire, by the rays that strike out towards the room, is continually driven back, crowded into the chimney, and carried up by the same draft of air. But here the upright heat strikes and heats the top plate, which warms the air above it, and that comes into the room. The heat likewise, which the fire communicates to the sides, back, bottom, and air-box, is all brought into the room; for you will find a constant current of warm air coming out of the chimney corner into the room." *–Benjamin Franklin*

Planning and Building Your Fireplace

Everything you need to know to do just that. Fireplaces built by guesswork are nearly always dreadful. If you don't know the rules, you had better learn. Here's where.

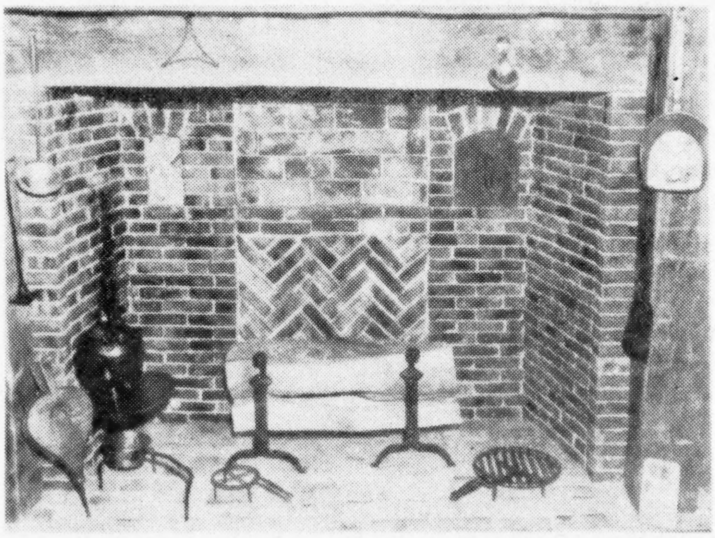
Planning and Building Your Fireplace
Margaret and Wilbur F. Eastman
1976; 124 pp.

$4.95

from:
Garden Way Publishing Co.
Charlotte, VT 05445
or Whole Earth

PLANNING & BUILDING
YOUR FIREPLACE

The Weed House, built around 1838 on the Shelburne (VT.) Museum property where it still stands, features this huge fireplace, built for cooking as well as heating.



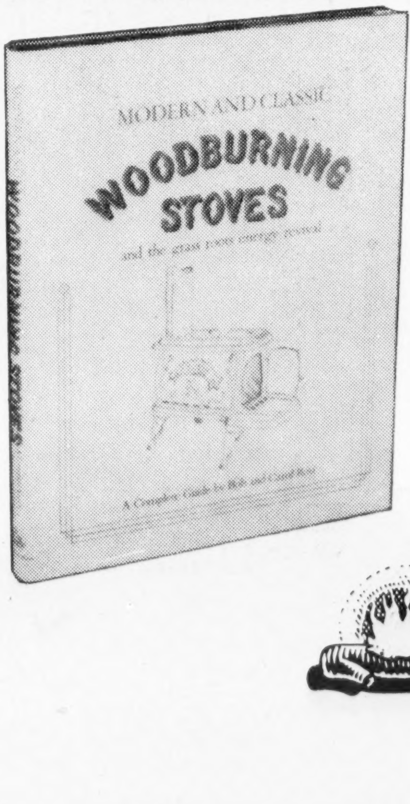
Modern and Classic Woodburning Stoves

Another thorough good one with nice drawings. Best coverage of naggy details that have to be right. Traditional types are shown too, as are homes specially designed to be heated with wood.

Modern and Classic Woodburning Stoves
(and the Grassroots Energy Revival)
Bob and Carol Ross
1977; 143 pp.

$10.00 postpaid

from:
The Overlook Press
The Viking Press, Inc.
625 Madison Ave.
New York City, NY 10022
or Whole Earth


MODERN AND CLASSIC
WOODBURNING STOVES
and the grass roots energy revival

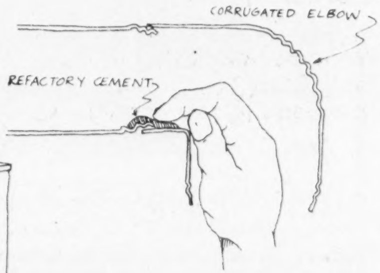

CORRUGATED ELBOW
REFACTORY CEMENT

Figure 30 SEALING STOVEPIPE JOINTS

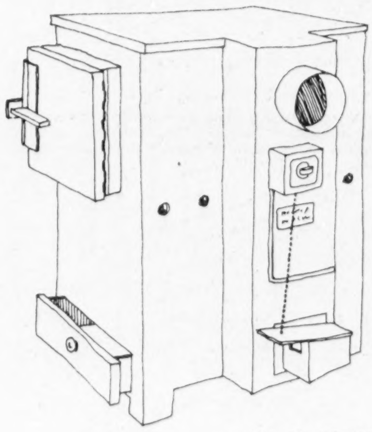


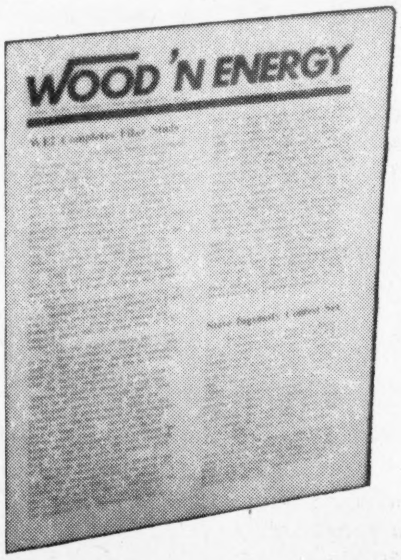
Figure 16 RITEWAY 37

Believe it or not, here is a stove that for most heating requirements need only be loaded every other day. And the price is around $400. A plenum-jacket and two sizes of water heaters are available as options.

Periodicals. They keep you informed while the book editors tool up for revised editions.

Wood 'N Energy

The (at least) quarterly of the Society For The Protection of New Hampshire Forests, and the Wood Energy Institute. You have to be a member to receive it. This is where you find the Latest Developments.



Wood 'N Energy
Information free
from:
Wood 'N Energy
SPNHF
5 South State Street
Concord, NH 03301

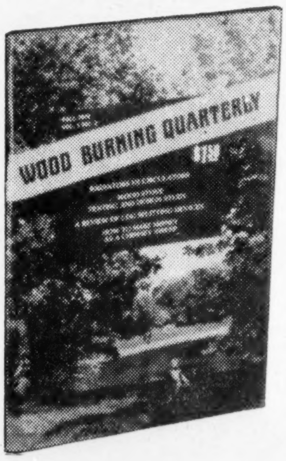
Ron and Gerri King have a new home in Loudon which they heat with wood.

After considering the problem of harvesting and handling fire wood the Kings came up with an interesting idea: A series of small mobile bins filled with split wood in the forest, loaded on a sleigh or wagon and drawn to the house. The bins are rolled from their dry storage place under the eaves and parked next to the stoves. Wood will always be available — and with no mess. What's more, once the wood is split it doesn't have to be handled again until it's actually thrown into the fire.

Wood Burning Quarterly

A very interesting collection of myths revisited, new products and techniques, and stories. Lots of ads too. The issue I have on my desk is 78 pages, mostly of good solid stuff.

Wood Burning Quarterly
$5.00 /yr.
from:
Wood Burning Quarterly
8009 34th Ave. South
Minneapolis, MN 55420



Wood Burning Brick Stoves
By Jaan Jaakson

The basic principle of such a stove is the property of clay brick to store heat and release it over a longer period of time. The most primitive form is the Russian stove, originating in 17th century Russia. . .

This writer grew up with a stove like this in rural Estonia, and the same type is still in wide use in that country and Russia. In normal winter weather a good armful of logs about 2 feet long, or a bundle or two of twigs was burned every afternoon and the stove remained warm until the next midday. In severe temperatures of up to 40° below, two firings in a 24 hour period were required.

Wood Stove Buyer's Guide

A handsome, big poster with a large variety of woodstoves (Lange, Jøtul, Down Drafter, Fisher, Morso, Riteway, etc., etc.) shown in very clear drawings flanked with specifications. The reverse side covers much of what is in the books on the subject. Looks great! Invaluable shopper's guide.

Wood Stove Buyer's Guide Poster
$3.50

from:
Northeast Carry
110 Water Street
Hallowell, ME 04347

TEMPWOOD V Mohawk Industries, Adams, Mass.

$219.00

24¼"x24"x14"

11" diameter top lid

100 lb.

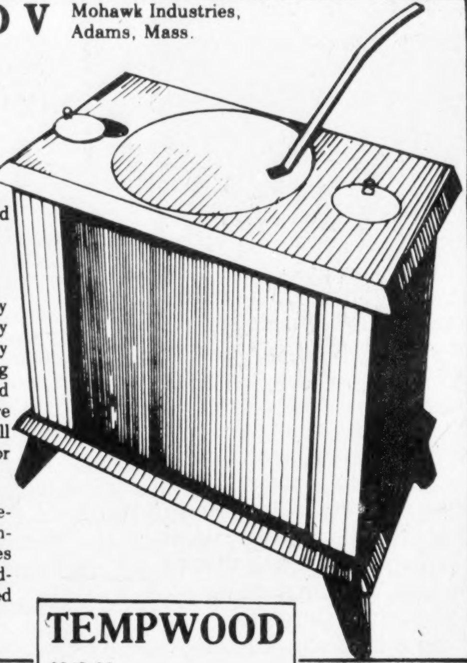
35,000 BTU

steel, with steel liner and cast lid

16"-18"

Handsome and reasonably priced. Mfr. claims very little ash buildup. Easily controlled for steady long burn. Steel liners may need eventual replacing; they are cooled, however, which will reduce stress. Excellent for fireplace hearth set-up.

A good stove to watch. Design shows considerable innovations. Top loader does not smoke if properly loaded. Maximum air delivered to gas combustion zone.



TEMPWOOD

$249.00

28"x28"x18"

11" diameter lid

132 lb.

60,000 BTU

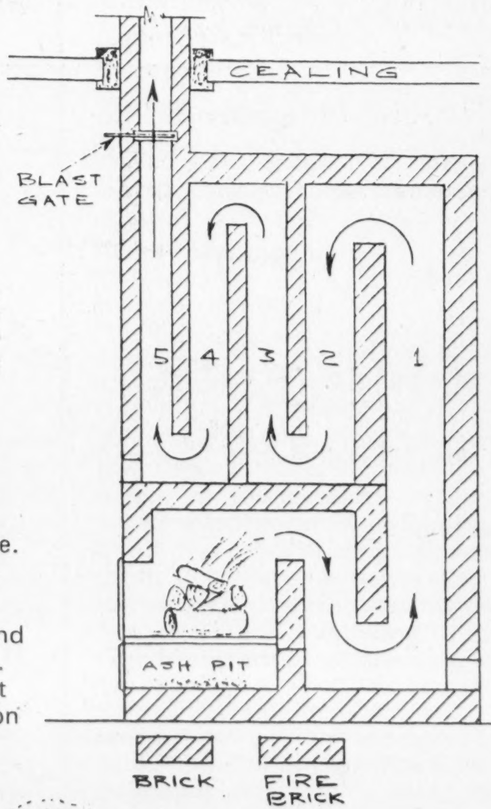
steel body, steel liner, cast iron lid

20"-24"

cf Tempwood V notes

cf Tempwood V notes

flue: 6"

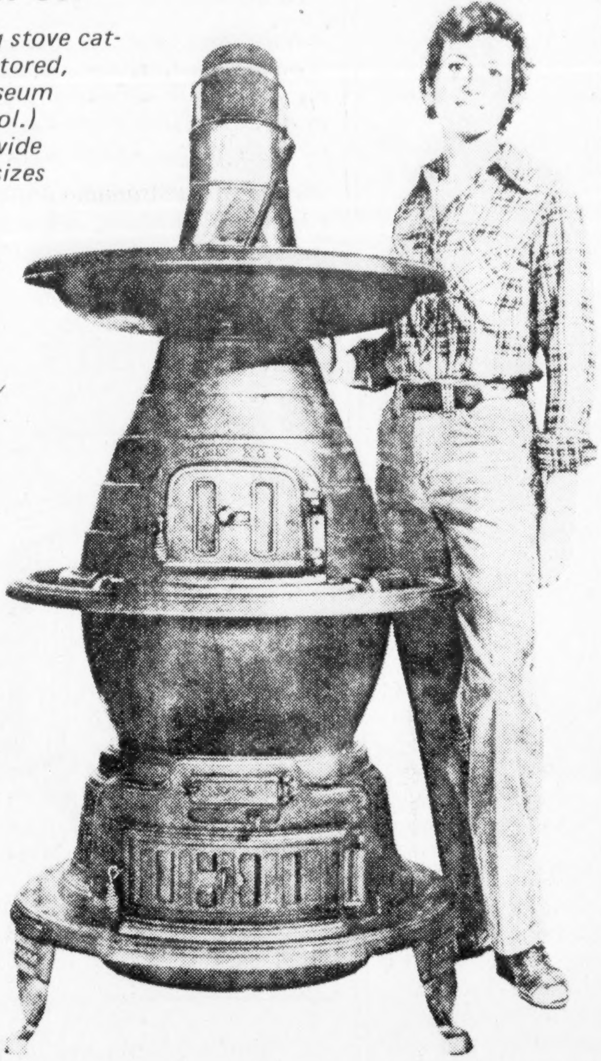


[more →]

Pioneer Lamps and Stoves Co.

This is to me the most fascinating stove catalog available. They also have restored, incredibly beautiful stoves at museum prices. (Well at least you can drool.) Their production stoves cover a wide range (so to speak) of types and sizes not often seen.

Pioneer Lamps and Stoves
Catalog
$3.00 postpaid
from:
Pioneer Lamps and Stoves
71A Yesler Way
Seattle, WA 98104



Another long-forgotten design, the B&M No. 5 is the largest and most efficient potbelly on the market today. It's tear-drop shape, three-legged stance, and exaggerated heat dome make modern folks pause and ponder. Although available in three sizes, the doors and fireboxes of the larger models are better for wood. In cannonballs, wood over six inches long burns best in blocks rather than lengths. Blocks settle together while burning in the bowl-shaped firebox, thus maintaining combustion until everything is burned. All cast iron/ all American made/ allow four weeks for delivery / $900.00.

Sotz Splitting Maul

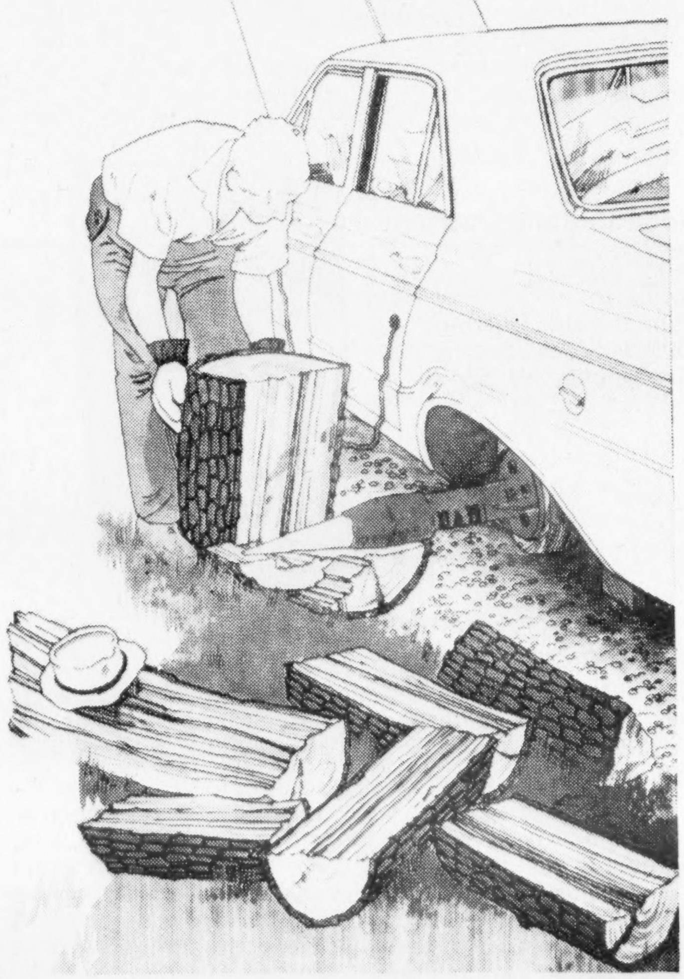
For hand-powered splitting, there's the Sotz, a monster of a maul with a wide-wedge (non-sticking) 20(!) pound head and a steel handle. You probably could split most anything in one smite with this thing, but doing in a cord all at one standing would likely be quite a workout. Too bad you couldn't pipe the operator's heat into the living room. . .

Sotz Wood Splitting Maul
$18.95 east of Mississippi
$21.25 west of Mississippi
from:
Sotz Corporation
23797 Sprague Road
Columbia Station, OH 44028

The Stickler

I'll admit to being very suspicious of this device when I first saw their advertisements. Well sir, if you see one work, you're more likely to be suspicious of your own eyes. The thing is absolutely amazing! They claim you can split a cord an hour. It does take gasoline to run it, but you get many more BTU than you spend. It's priced for what the market will bear, but I'd say it is the best power splitter made at any price. Even stumps! You wouldn't believe it. . . .

The Stickler
$200.00 (approx.)
from:
Taos Equipment Manufacturers, Inc.
P.O. Box 1565
Taos, NM 87571



OPERATION

The engine is turned on and set at a fast idle. The side of the log is pressed onto the spinning tip of The Stickler. The log is offset so its lower end braces against the ground to prevent it from spinning. The Stickler then simply screws through the log, splitting it open — usually within 10 seconds.

Splitting capacity —

Approximately one cord per hour.

Safety switch —

A shut-off switch is provided with each unit. It attaches to the negative distributor terminal and runs to the work area where the switch is attached magnetically to the side of the vehicle and clips to a suitable ground.

Stickler tip —

The replaceable alloy steel tip is guaranteed never to need sharpening under normal use.

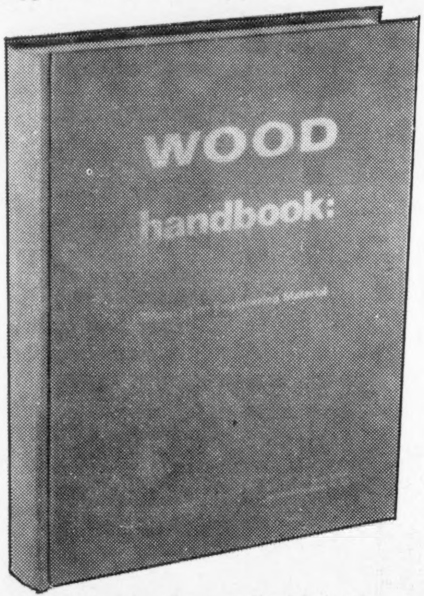
. . ,**End of "Burning Wood" article** ■

Wood Handbook

Do you really know the best way to "toe-nail"? (I didn't either.) What formula do you use to calculate the load-carrying ability of a stressed skin plywood floor? Is it safe to use dead wood for structural parts? Do you think you know it all? Well a quick look in this authoritative handbook will illuminate your ignorance and show you the stuff you need to know about wood and how to use it. Not an ego-book either; there's 60 years of Forest Service laboratory tests behind the recommendations. Everything, and I mean everything is covered right down to the last splinter.

—J. Baldwin
[suggested by Carl Zipper]

Wood Handbook
(Wood As An Engineering Material)
U.S. Department of Agriculture Forest Service
1974 (updated & revised); 415 pp.
$7.85 postpaid
from:
U.S. Government Printing Office
Superintendent of Documents
Public Documents Dept.
Washington, D.C. 20402
or Whole Earth



Tests show that the maximum strength of toenailed joints under lateral and uplift loads is obtained by (1) using the largest nail that will not cause excessive splitting, (2) allowing an end distance (distance from the end of the attached member to the point of initial nail entry) of approximately one-third the length of the nail, (3) driving the nail at a slope of 30° with the attached member, and (4) burying the full shank of the nail but avoiding excessive mutilation of the wood from hammer blows.

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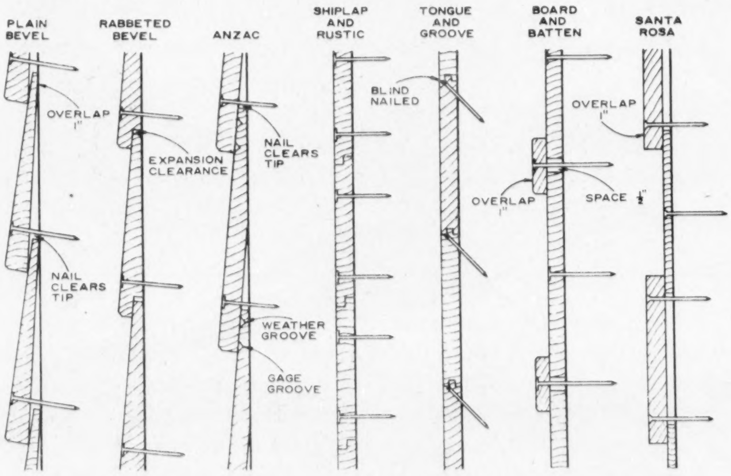
Recommended nailing methods for various types of wood siding.



Little arctic solar trackers

CoEvolutionary Game: Many arctic flowers, especially buttercups, are shaped quite similar to a parabolic mirror and in fact have the same function. By focusing all the available heat in the center of the flower, a pollinating insect is warmed. This allows the insect to react quickly to predators and to fly further to spread the flower pollen. Thus the flower helps the insect's chance of survival and the insect has a better chance of pollinating another flower.

—Rob Roach
Olympia, Washington

Timber Saw

May I nominate this device as the answer to which chainsaw meets your needs? Cheap, quiet, very long life, easy to start, lightweight (less than 5 lbs.) and reasonable on fuel. Tends to improve one's canoe arm, too.

—J. Baldwin

Timber Saw
No. C-3712.7
$44.50 plus postage
from:
Brookstone Co.
Brookstone Bldg.
Peterborough, NH 03458

Heat with flowerpots

I know a few things that might be of interest to other CQ readers (old-world-hints). Maybe you know them already, but what the hell! First, the flowerpot-heater (an old trick from my mother from World War II when coal was scarce) for people with freezing kitchens and gas stoves (like me). Instead of turning on an electrical heater, light the burner and place a big empty unglazed clay flowerpot (the red kind with a hole in the bottom that sell for a few pennies at garden supplies stores) upside-down over the flame. The pot will get hot very fast and reflect the heat much more efficiently than the flame alone. (Don't touch the pot, it might get red-hot!) In a short time your kitchen will be warm and cozy.

—Barbara Besser
Munster, W. Germany

(Make sure pot is dry or it'll explode. —JB)

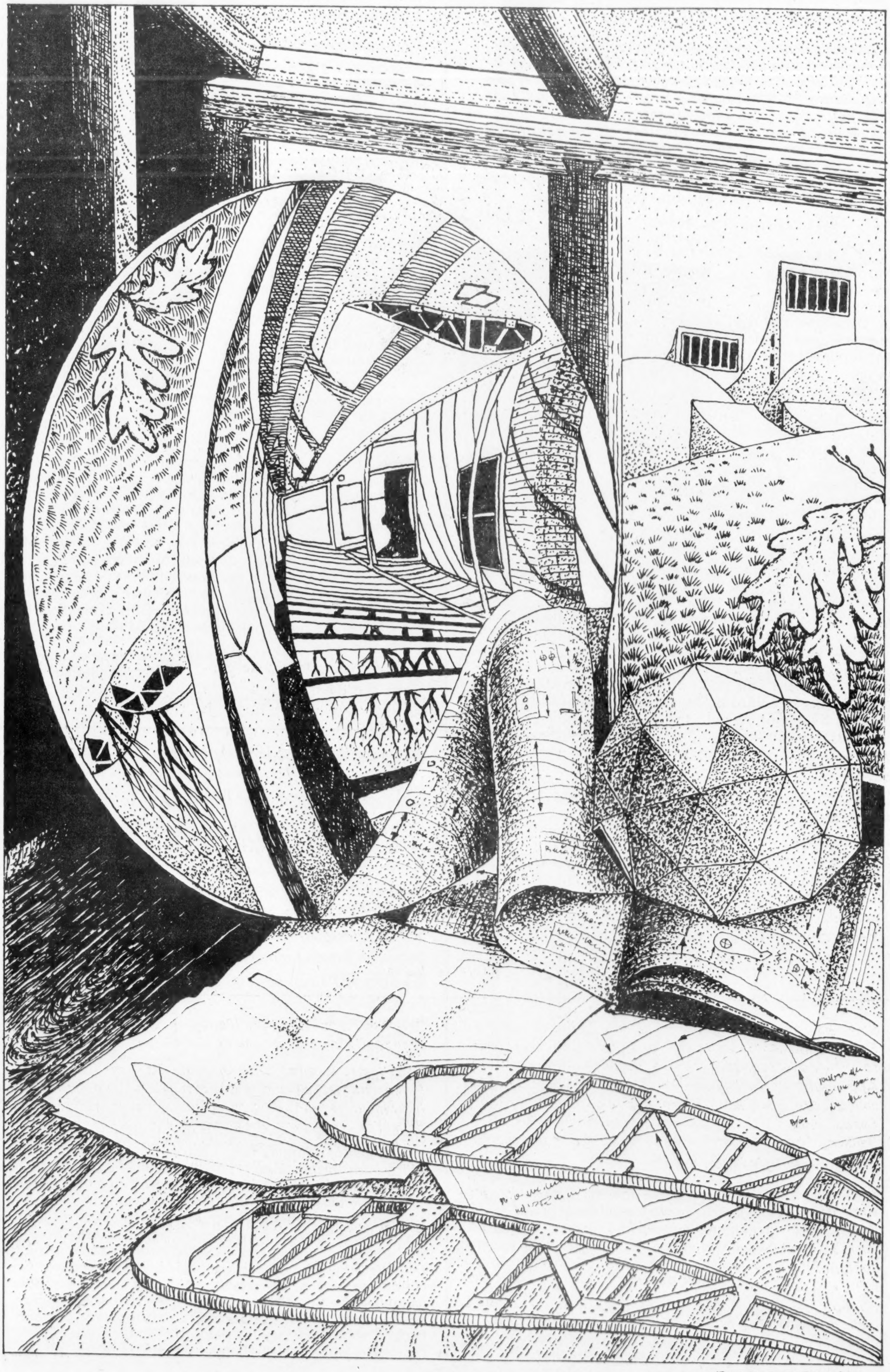
August West Chimney Sweep

Here's how to get started as a chimney sweep. The handbook is remarkably complete in showing how to set up a business (any business, actually), but the sweeping instructions are intended only for those in possession of the special brushes and dust vacuum they sell.

—J. Baldwin

August West Chimney Sweep Handbook
$9.50 postpaid
Complete Sweep Equipment Kit
$1385.00 (includes Top Hat)
from:
August West International
33 Rae Lane
Norwalk, CT 06850

The market is huge and growing — what it takes is education. The advertising I've used here in Connecticut does two things. One, it tells people they have a serious problem in their home and unless they have their chimney cleaned they face the real danger of chimney fire. I use outside, authoritative sources for this message — people like the National Fire Protection Association. And two, my advertising makes them smile. I've heard of chimney sweeps working in coveralls and trying to present themselves as servicemen. Well they're right, it's a service. But it's a much more attractive service when the guy doing it looks like a 19th Century tradesman, with all that that implies: honesty, simplicity, a high degree of dedication, and a sense of humor. All these qualities are sadly lacking in the business world, but I felt that as a chimney sweep, I had a golden opportunity to bring some of them back. I think I can say it's paid off — in the form of happy customers and a healthy bank account.



TOM PARKER

The Ultimate City

BY J. G. BALLARD

Part 1

ALL WINTER, WHILE HE WORKED on the sailplane, Halloway had never been certain what drove him to build this dangerous aircraft, with its ungainly wings and humpback fuselage. Even now, as he crouched in the cockpit during the final seconds before his first flight, he was still unsure why he was perched on the steep cliffs above the Sound, waiting to be catapulted into the overlit water. The tapered wings shivered in the cold air, as if the aircraft were trying to rip open the cockpit and eject its foolhardy pilot on to the beach below.

It had taken since dawn for Halloway and his helpers – the crowd of ten-year-olds who formed an enthusiastic claque and coolie-gang – to drag the sailplane from the barn behind his grandfather's house and secure it to the catapult. By the time they reached the cliffs the other contestants in the gliding championship had been aloft for hours. From his cockpit Halloway could see a dozen of the brightly painted craft hanging above his head in the calm sky.

On the ground, by contrast, the turbulent air sweeping up the face of the cliffs seemed to have broken loose from a tornado. Exhausted by the effort of carrying the glider, the boys hung limply from the wings like a line of ballast bags. At any moment a sudden gust would sweep them all into the air together.

© 1976, J.G. Ballard

[more →]

Steve Baer found this masterpiece on a recent visit to England and sent it to us with so much praise he refused to write an introduction for fear of diminishing the story. At present it is available only in Great Britain, in a book called **Low-Flying Aircraft and Other Stories** *(Jonathan Cape, London 1976). There is another recent book of Ballard's,* **High-Rise,** *which is being printed in the U.S. by Holt, Reinhart & Winston, New York.*

According to rumor J. G. Ballard was born in China, spent some of his youth in a Japanese concentration camp during World War II, studied engineering in England, and a few years ago lost his wife in a car crash. More than any other contemporary science fiction writer his work is considered to be literature. Some of it, such as the story "Repent Harlequin, Said the Tick Tock Man," is classic. His books include **The Crystal World** *(Avon),* **The Drought** *(Penguin),* **The Wind from Nowhere** *(Penguin),* **The Drowned World** *(Penguin), and half a dozen collections of short stories.*

The illustrations for "The Ultimate City" are by Tom Parker, himself an avid sailplane pilot. He comments, "I was hesitant to get into portraying characters as much as I did here. The strength of visual images can really stomp on written work, overriding gentle words and subtle descriptions. I usually prefer to parallel a story with visual suggestions and embellishments. Hopefully, these drawings will tread lightly on Ballard's story."

On the phone J. G. Ballard enthusiastically gave us permission to reprint. He remarked that the City is meant to be any major bay city, Marseilles, Tokyo, San Francisco, but it is based on New York. There is in fact a Garden City on Long Island. And those who detect some parallel with Shakespeare's "The Tempest" will not be far off.

–SB

In front of Halloway were thirty feet of miniature railway-track and the steel cable linking the sailplane to the sand-filled trolley at the edge of the cliff which would either pull the craft apart or, with luck, catapult it into the air. Halloway signalled the boys aside, and gripped the catapult release lever in both hands. Once again he reminded himself that the Wright Brothers' first sustained flights, little more than a hundred years earlier, had also been launched by catapult.

'Thanks, everybody – now stand back!' he shouted above the wind. One of the smallest boys was still clinging absent-mindedly to the port wing-tip. 'Jamie, let go, for God's sake! *Take off!*'

As the trolley lurched forward, dragging the sailplane after it like a startled bird, Halloway felt the sudden strength of the huge wings and knew already that the aircraft would be the most successful of all those his father had designed before his death. At the edge of the cliffs the trolley hurtled down its track. Halloway released the towing cable, and the glider rose steeply, carried upwards by a cold hand, almost falling on to its back in the rush of wind. The dunes and the beach reeled away to starboard, taking the world from him. The cheers of the spectators were lost in the shrill soughing of the slipstream.

Thirty seconds later, Halloway had climbed a turbulent staircase that carried him in a right-hand spiral to a height of a thousand feet. Abruptly everything around him had become quiet. Little more than a whisper, the wind sucked softly at the fabric of the glider. The heat from the sun stung his blond skin, but Halloway ignored the pain and trimmed the glider into a stable attitude. As always, his father's design had been without error. After the first yawing subsided he began to move the glider across the sky, almost feeling his father's presence in its powerful span. The sailplane soared like a condor in the thermals, dominating the other competitors now far below. Relaxed and happy now, Halloway sat back, ready to preside generously over his domain.

HALLOWAY HAD BEGUN to build the sailplanes two years earlier. After his parents' death he had moved to his grandfather's house, and for a long while had been reluctant to return to his old home. The charred remains of the sauna where his mother and father had died lay untouched below the derelict sail of the solar energy rig. The hundreds of occluded mirrors, fused by the intense heat of the fire, towered fifty feet above the calcinated roof tiles, an all too melancholy memorial.

One evening, while discussing the annual gliding competition, which the residents of Garden City organized in order to let a little civilized rivalry into their pastoral lives, his grandmother mentioned that Halloway's father had been a keen amateur pilot during the last days of powered aviation. On an impulse Halloway borrowed the keys to the house and wandered through the gutted rooms. Only the studio and workshop, separated from the house by an arm of the canal which irrigated his parents' market garden, had escaped the fire. The shelves were filled with relics of his father's restless mind – antique gear-boxes and carburettors, mementoes of the vanished petroleum age, and the designs for a series of progressively more ambitious sailplanes. The half-completed skeleton of a small glider still lay on its trestles in the workshop.

Halloway pored over the blueprints for months, intrigued by his father's casual but clear calligraphy. The marginal jottings formed a running diary of the rich inner life of this endlessly inventive man, by a bitter irony killed beside his wife in his own home by the overloaded circuitry of an advanced solar device he had designed himself. Like some pastoral Leonardo he had sat in his studio in the centre of this placid market garden. As the canals flowed between the greenhouses filled with flowers and vegetables, as the water-wheels turned and the hundreds of solar sails silently drained light from the sun, he had devised ever more complex tidal-energy pumps and solar batteries, refuse recycle units and windmills. His real passion, though, apart from his curious interest in old internal-combustion engines, was for these gliders.

All that first winter Halloway had examined the blueprints, feeling the contours of his father's mind in these graceful airframes and wing designs. Several of the aircraft featured extensive control-surfaces, strengthened fuselage-members far in excess of any wing-loading they might need, almost as if they were designed to carry some secret cargo. But Halloway began with the most basic of the gliders. Fortunately, the art and practice of carpentry had reached an advanced level in Garden City. Where an earlier generation of teenage boy learned to strip a carburettor or re-set a distributor, the young of Garden City were expert by the age of twelve in joining and flitching and dovetailing. Within a month his group of eager assistants had helped him to build his first modest sailplane, ready in time for the summer's gliding championship.

As he urged them on, however, watching them cut and stitch the fabric, plane and polish the struts and stringers, Halloway had known already that the competition was only an excuse. He was driven by some other need, connected not so much with his father as with the metal relics, the superchargers embedded in lucite, the fuel pumps and speedometers that lay around the studio like the ornaments of a shrine dedicated to the vanished spirit of the Otto Cycle.

Long before he became a skilled pilot, Halloway had been able to outfly his rivals, as much by pure aggression as by airmanship. None of the other competitors would rise to his baiting, let alone put up a fight. Although the championships were the climax of the year's flying, the other pilots were happy to award him the prize. When he banked and dived towards the beach, chasing the faster thermals behind the dunes, the two gliders he forced aside made way for him without complaint. Their pilots, a thirty-five-year old architect whom Halloway was always beating at tennis, and an elderly hydrographer with a red beard, had both visited the workshop to watch the construction of this huge glider, and warned him of the impossibility of launching such a craft.

Both had been suitably impressed by Halloway's catapult. They were clearly glad to see Halloway succeed – too glad, in fact. If they had not been so naturally lacking in deceit they might have questioned his motives for building this elaborate craft – not that he would have been able to answer them – but Halloway's blond hair and guileless blue eyes turned aside any suspicion. Eager for action at all costs, yet shy and very much the dreamer, Halloway had a natural talent for rallying people around him.

At the same time, he liked to provoke the crowd. Looking down at the spectators with their picnic hampers among the dunes, the officials gazing at the sky from their canvas chairs, Halloway imagined himself as a World War II fighter ace, diving out of the sun and raking these amiable neighbours with bursts of machine-gun fire. The whole bucolic landscape of Garden City, this elegant but toy-like world of solar sails and flower-filled gardens, the serene windmills and gently nodding reduction gear of the tidal-power machines – all these cried out for a Pearl Harbour.

Surprised by this strain of aggression in himself, Halloway checked his temper. Most of the three hundred spectators he had known since childhood, intelligent, civilized and kindly people who had done their best to care for him since his parents' death, and enjoyed being shocked by his desperado stunts.

They were all watching him now, hands shielding their eyes from the sun. The coolie-gang of small boys squatted on the catapult rails, obviously waiting for Halloway to astonish them.

A mile away, across the Sound, the steep concrete walls of an artificial island rose from the sea like the hull of a cruise liner. The island was a former naval station, a collection of rusting metal buildings around a lighthouse. Although little more than swimming distance away, Halloway had noticed that few people in Garden City were aware of the island, as if they mentally assigned it to the tower blocks of the old metropolis on the opposite shore of the Sound. The previous summer Halloway had rowed out to the island, winding through the dangerous labyrinth of tidal power pontoons and rocker arms that separated the beach from the sea. In the pump-room below the lighthouse he found the huge diesel engines that once powered the warning beacon, each the size of a steam locomotive.

But even his surprise at the enormous latent power of these metal beasts paled before his first real sight of the city. He stood on the rusting catwalk, hands gripping the rail to stop himself from diving into the cold waters of the Sound and setting off to the far shore. The vast office-blocks, many over a hundred storeys high, formed a silent congregation, more remote and yet closer to him than ever before.

BELOW HIM, as the glider climbed the thermals, the first people in the crowd were standing up among their picnic hampers, the officials waving their chequered flags at Halloway. Already they had guessed that he intended to circle the lighthouse. Halloway climbed away from them, making use of the strong updraughts that rose from the heated greenhouses, solar reflectors and rooftops, the warm canals and clay tennis-courts. Already he was looking down, not only at the naval island, but at the distant towers of the city.

When Halloway reached the naval island half an hour later the shoreline of Garden City was far behind him, the lines of solar reflectors forming strips of metallic glitter. He had meant to impress everyone by making a few circuits of the lighthouse before returning, but as he soared above the water he could feel the wind carrying him further across the Sound. At any moment it would be too late to turn back. He waited for the glider to bank to port or starboard, but the sailplane pressed on across the deep water. Already Halloway could see the canyons opening among the office-blocks of the city, an abandoned dream waiting to be re-occupied. Shadow and sunlight alternated between the buildings, as if flashing some kind of cryptic message to him. But Halloway knew that he had made his decision, and why all winter he had been building this strange aircraft.

BORNE ALONG by the fronts of warm air, Halloway and his glider made their transit of the Sound. The opposing shorelines had begun to converge, and little more than three miles of water separated the beach communities from the deserted quays and motor-routes of the city suburbs. Exhilarated in a way he had never known before, Halloway gripped the control stick with his knees, and stretched out his arms to seize the vivid air. He was not alone in the sky. On all sides flights of wild birds were crossing the Sound – pintails and white-fronted geese, mallard and harlequin duck. A colony of herring gulls moved below him, changing course when they passed Halloway as if guiding him through the crowded air. No longer hunted by the vegetarian inhabitants of Garden City, immense congregations of water birds thrived around the uninhabited shores of the Sound, in the mud-flats, lagoons and sloughs between the market settlements and the old metropolis.

Ahead of him, across the mercury surface of the sea, a collapsed suspension bridge lay like a drowned saurian in the gateway of the Sound. The last of the market gardens gave way to uncultivated scrubland. The canals petered out among the sand-hills. Ten miles from the city, by some unwritten rule, as if they were aware that the physical spell of the metropolis might still intimidate them, the last inhabitants to leave their factories, offices and apartment houses had marked out a no-man's-land to separate themselves from their pasts. Halloway remembered his grandfather's lurid account (the old man was only too keen to be tricked into these reminiscenses) of how the city, like a thousand others around the globe, had gradually come to a halt and shut itself down for ever. When the world's reserves of fossil fuels had finally been exhausted, when the last coal silos were empty and the last oil-tankers had berthed, the power-stations and railway systems, production lines and steel-works had closed for the last time and the post-technological era had begun.

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BY THEN, twenty-five years earlier, there had been few people left anyway. By some unconscious perception of their own extinction, the huge urban populations of the late twentieth century had dwindled during the previous decades. Halloway's parents had been among the last to leave, abandoning their apartment – the only one still occupied – in one of the high-rise blocks that Halloway could see now emerging from the haze beyond the ruined suspension bridge. Perhaps it was this long-postponed departure that had separated his father from the other inhabitants of Garden City. The small but determined parties of colonists – doctors, chemists, agronomists and engineers – had set out into the rural backwaters determined to build the first scientifically advanced agrarian society. Within a generation they, like countless similar communities around other major cities, had successfully built their pastoral paradise, in a shot-gun marriage of Arcadia and advanced technology. Here each home was equipped with recycling and solar-energy devices, set in its own five acres of intensely cultivated market garden, a self-supporting agricultural paradise linked to its neighbours by a network of canals and conduits, the whole irrigated landscape heated and cooled, powered and propelled by a technology far more sophisticated in every respect than that of the city they had abandoned, but a technology applied to the water-wheel, the tidal pump and the bicycle.

HE HAD REACHED the western limits of the Sound. A thousand feet below was the broken back of the bridge. Halloway circled a huge ceramics works on the southern shore, letting the hot air reflected from the roof-tiles lift him as high as possible before he made the crossing to the city. The downtown office-blocks and apartment-houses were still nearly ten miles away, but facing him across the bridge was a built-up area of dockyards, suburban department stores, car-parks and motor-route intersections. Moored to the quays were line upon line of rusting freighters and oil-tankers, their hulls like husks.

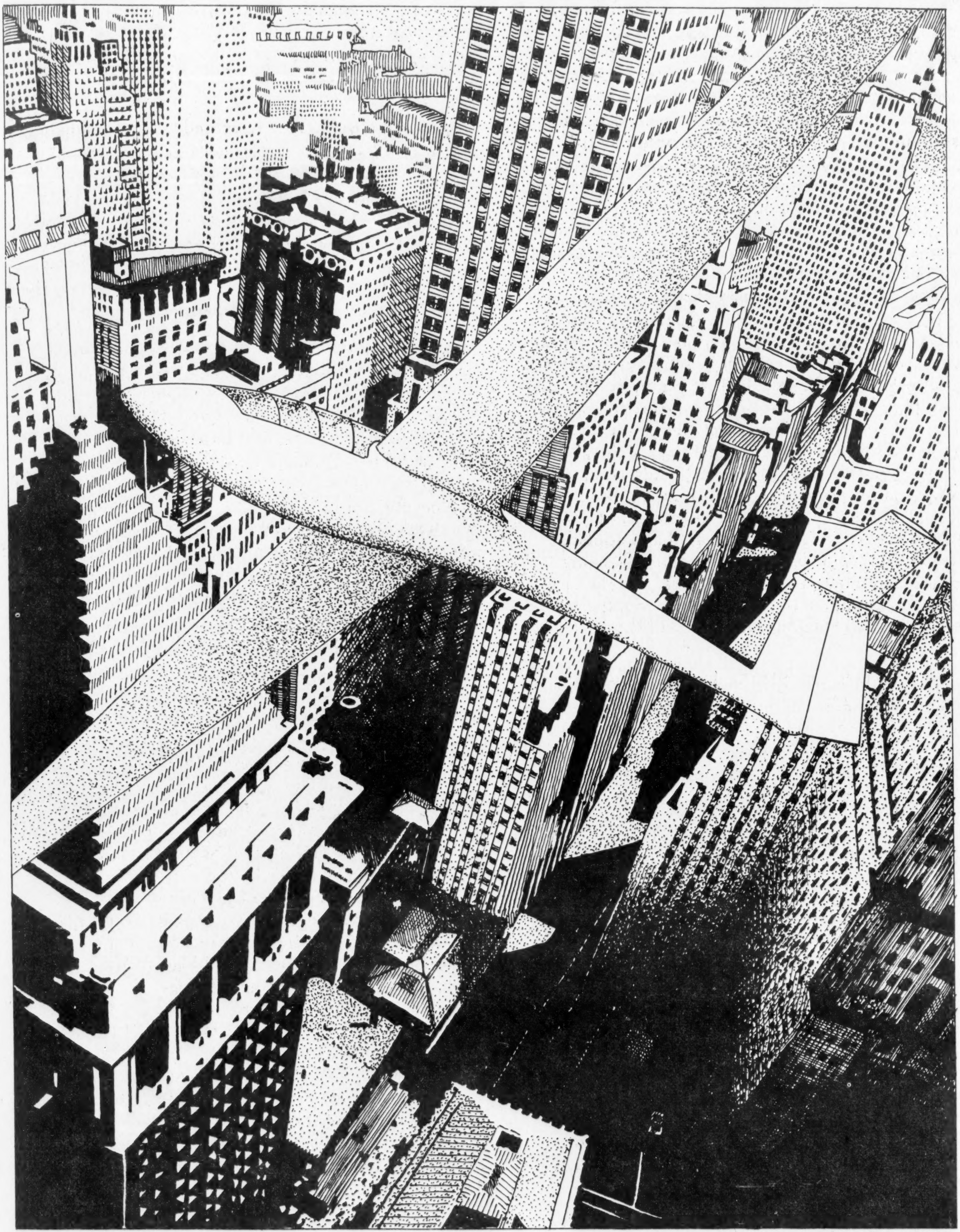
For the first time, as he steered the glider across the bridge, Halloway could see the cars, hundreds of the dusty vehicles lining the quaysides, parked in the empty side-streets on flattened tyres. Immense roads ran everywhere, causeways of steel and concrete that moved like some kind of serpentine sculpture through complex interchanges. Traces of these broad decks, never less than six lanes wide, were still to be found in Garden City – on an intact half-mile section behind his grandfather's house the inhabitants staged their annual bicycle rally.

Needless to say, there were no cars in Garden City. If there had been, Halloway often thought with a kind of blank bitterness, his mother and father would still be alive. Despite their severe burns, they might still have been saved by the intensive-care unit at the hospital three miles away. The fastest transport available had been the village fire-appliance. This brilliantly designed land-yacht, fitted with the most efficient system of metal sails ever devised, and with an advanced magnetic suspension invented by a local electrical engineer, achieved a top speed of six miles an hour. By the time they reached the hospital, their distraught son tearing at the aluminium sails in a frenzy, the Halloways were already in deep shock and died the next day.

AS HE CROSSED the ruined bridge, losing height in the cold air over the water, Halloway counted the cars in the parking-lots along the quays. Scores had been abandoned on the bridge approach-roads when their owners set out on foot. The salt air had stripped away their roofs and body panels, exposing the engines and steering gear. Halloway had seen automobile engines before, in the encyclopaedias of industrial archaeology at the village school. Once, as a boy of ten, he had entered his father's workshop and found him running an old gasolene engine. The violent but controlled noise, the juddering motion that shook the work-bench and timber walls, and the heady fumes like a black gas – an intoxicating smell at once dirty and exhilarating – had almost knocked him off his feet. What he remembered above all, before his father switched off the engine and crated it away for the last time, was the overwhelming energy of this machine, the power and excitement beyond anything else in their sophisticated Arcadia. And yet, as his father told him, this was no more than the power unit of a small lawn-mower.

Not that there was any taboo against gasolene engines, nor for that matter against oil- or coal-fired steam-engines. There was merely a tacit understanding that for two hundred years proto-industrial man had pillaged the earth's natural resources, and these relics were unwelcome reminders of an unhappy history. Beyond this were boredom and indifference – the inhabitants of Garden City were aware that their technology, their advanced horticulture and their casual winning of energy from the sun, the wind and the tides, had progressed far ahead of anything the age of oil and coal had achieved, with its protein-hungry populations, its limitless pollution of air, soil and sea. By the time it reached the opposite shore the sailplane was barely three hundred feet above the metal-strewn water. The ragged edge of the eight-lane roadway passed below Halloway, the lines of cars forming bowers of rust from which a few sea-flowers flashed their blooms. Huge numbers of pigeons had taken over the silent city, and Halloway could almost believe that he had entered a vast bird-sanctuary. Thousands of starlings clustered among the seats of a deserted sports stadium. Generations of thrush and blackbird had nested on office window-sills and in the seats of open cars. Halloway had to bank sharply to avoid a pair of swans struggling to gain height above a row of dockyard cranes.

Barely clearing a warehouse roof, the glider rose again in the warm air lifting from the hot concrete of the roads and parking lots. A maze of telegraph wires straggled across the quay-side streets. Halloway flew on above the rusting customs sheds, and crossed the tidal basin of a silted-up dockyard, where a boom of freighters sat in a few feet of water. Beyond a silent railroad station, where ranks of trains stood in waist-high grass, he approached the outskirts of an urban centre, one of a dozen satellite cities on the perimeter



TOM PARKER

of the metropolis. Everywhere there were stores filled with domestic appliances, furniture, clothing and kitchenware, a glut of merchandise that Halloway had never anticipated. In Garden City there were few stores – everything one needed, whether a new solar-powered kitchen stove or a high-speed bicycle, was ordered direct from the craftsman who designed and built it to one's exact needs. In Garden City everything was so well made that it lasted for ever.

Following the main arterial highway which led towards the next satellite city, Halloway crossed an area of tract housing and single-storey factories. In the open fields a local manufacturer had dumped what appeared to be a lifetime's output of washing machines. Line upon line of the white and chromium cabinets stood in the sunlight. Warm air rose from this field of metal, carrying the glider high above the concrete embankments of a cloverleaf.

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Directly in front of Halloway there was a flash of light in the glassy face of a 15-odd storey office building. Out of this sunburst huge wings moved in the bright air. A powerful aircraft, with a wing-span as large as his own sailplane's, soared straight towards him. In panic, Halloway plunged the glider into a steep turn, cursing himself for entering the air-space of the city, with its empty towers guarded by aerial demons. As the glider banked across the face of the office building his opponent also turned. His long wings, built to the same plan as Halloway's, were raised in a defensive gesture. A hundred feet apart, they soared together along the curtain-walling, the pilot's white face staring at Halloway in obvious alarm.

Without warning, this timid intruder vanished as suddenly as he had appeared. Turning back, Halloway circled the streets around the office block, searching for any sign of the rival sailplane. Then, as he passed the office block with its mirror-glass curtain-wall, he realized that he had been frightened by nothing more than his own reflection.

Delighted now, Halloway soared to and fro across the face of the building, playing the fool and happy to mimic himself, wingtip little more than ten feet from the curtain-walling. He waved at his reflection, holding the control stick with his knees, proud of his skill and glad to be able to show off to himself. He rose above the building on the strong currents lifting from the metal roofs of the cars, and then plunged towards himself in a 100-m.p.h. dive, swerving away at the last moment, wingtip punching out a section of the mirror.

'Olé . . . !'

His shout of glee was lost in the splintering glass. On his third dive, as he plummeted downwards, he no longer cared when a gust of wind drove him laterally across the streets in a storm of cigarette packs. Out of control, the sailplane was hurled against the curtain-walling, knocking out a dozen windows. Colliding with his own image, Halloway fell with the broken machine among the cars a hundred feet below.

AN HOUR LATER, HALLOWAY left the crashed glider lying at the base of this huge rectilinear mirror and set off towards the towers of the city five miles away to the south-west.

Protected by the buckling wings, the cockpit of the glider had fallen among the vehicles parked outside the entrance to the office block. Hanging upside-down in the harness, Halloway punched out the fractured canopy, released his straps and lowered himself on to the roof of a green sedan.

Too shocked to do more than glance numbly at the face of the building which had dashed him from the air, Halloway had climbed across the splintered wings of the glider. Picking a car at random, he lay down in the rear seat. In this warm, stale air, almost unchanged for thirty years, he rested quietly, massaging his bruised chest and shoulders. The domed cabin of the car, with its softly sprung seats and antique contours, its raw metal functionalism, was a fitting womb to guard his passage from the open transits of the sky to the hard and immobile concrete now surrounding him on all sides.

Already, though, when he stepped from the car after an hour's rest, Halloway was coming to terms with the scale and character of the cityscape into which he had fallen. Display signs proliferated everywhere like some voracious metal flora, untrimmed and uncontrolled. The crudeness of the asphalt and concrete streets compared with the tiled and flower-decked pathways of Garden City, the elemental technology of power cables and ventilation shafts, had all the anarchic strength of a proto-industrial society, closer to the massive cantilever bridges and steam engines of the great Victorians than to Halloway's image of the Twentieth Century.

A mile to the north-east a line of rusting cranes marked the shoreline of the Sound. If he walked through the side-streets he could reach the ruined suspension bridge in less than an hour, cross the channel by swimming from one section to the next, and be home by evening.

Without thinking, Halloway turned his back on the shore, on the cranes and rusting freighters. For all their apparent menace, the cluster of skyscrapers offered more security to him than the pastoral world of Garden City with its kindly farmers and engineers. Somewhere among those tall buildings – on the topmost floor, he was certain – was the apartment in which his mother and father had lived. As for any worries that his grandparents might have for his safety, Halloway was sure that they, like the crowds on the beach, knew only too well where he had gone.

Halloway climbed over the broken-backed fuselage of the glider. He stared at the wreckage, thinking of the months he had spent building the craft. Lying here at the foot of this mirror it reminded him of the body of his father stretched out below the solar reflector in the burnt-out ruins of his house.

'Come on! Forget it, Halloway!' With a whoop, Halloway leapt over the sailplane and set off along the street. Shouting to himself, he ran in and out of the cars, pounding on the roofs with his fists. He was going home.

FOR THE NEXT TWO HOURS, as the sun drifted across the Sound, Halloway pressed on down the long avenues that carried him, block after block, into the heart of the metropolis. The office-buildings and apartment-houses grew larger, but the centre of the city remained as distant as ever. But Halloway was in no hurry, far more interested in the sights around him. His first feelings of nervousness had gone. Curiosity devouring everything, he ran past the cars that sat on flattened tyres on the roadway, skipping from one side of the avenue to the other when something caught his eye. Many of the stores, bars and offices were unlocked. In a hairdressing salon – an Aladdin's cave of chromium gadgetry, mirrors, thousands of coloured bottles – he sat in the rotating chairs, and tried on a succession of wigs, grimacing at himself in the dusty mirrors. In an empty department-store he lost himself in a maze of furnished rooms, each like a stage-set, decorated in the styles of nearly half a century earlier. The synthetic curtain and carpet fabrics, with their elaborate patterns and lamé threads, were totally unlike the simple handwoven worsteds and woolens of Garden City.

Halloway wandered around these darkened tableaux, these ghosts of bedroom suites and dining-rooms. He lay back grandly on an ornate four-poster, stroking the deep pile of the bedspread. What amused him, above all, was the feel of this vanished world, a surprise more tactile than visual.

In the dim light of a men's-wear department he pulled clothes racks on to the counters, jerked open the cabinet drawers. A cornucopia of suits and shirts, shoes and hats spilled across the floor. Stripping off his woollen trousers and jerkin, like the uniform of an ignorant medieval churl, he selected a new costume – red-white-and-blue sneakers, yellow suede trousers and a fleece-lined jacket with silver-thread embroidery and leather tassels as long as his arm.

In this modest attire he swung happily along the avenue. Thousands of cars lined the streets, their flamboyant bodywork covered with moss. Wild flowers peeped from the radiator grilles. Halloway stopped at every tenth car and tried to start the engine. Sitting behind these dead controls, he remembered the car he had found buried in the dunes at Garden City. The roof and doors had rusted away, but he sat for hours behind the wheel of this drowned hulk. By contrast, the cars here had barely been touched by the weather. Under the moss and dirt the lurid paint was as bright as ever.

Halloway was disappointed that none would start. Rocking a black limousine that took his fancy in an automobile showroom, he could hear the fuel still swishing in its tank.

'Somewhere, Halloway,' he told himself aloud, 'you'll find a car that runs. I've decided you're going to arrive in style . . .'

At dusk, as Halloway passed a park filled with wild trees, shrubs and flowers of every kind, he realized that someone was following him. The soft tap of feet, sometimes barely moving, then running obliquely behind him, sounded faintly through the dark air. Heart racing, Halloway crouched among the cars. Nothing moved across the street. He filled his lungs with air, and broke away with a burst of speed, darting in and out of the cars. He dived through the open door of an evacuation bus parked by a hotel entrance and watched from the rear seats.

Five minutes later he saw the first of his shy pursuers. Edging forward cautiously, its eyes still on the park fifty yards away, a large deer hobbled along the sidewalk, searching the dim light for Halloway. Within moments two more appeared, steering their antlers through the overhead wires that trailed across the road.

As he watched them scenting the darkness, Halloway remembered the placid creatures in the zoo at Garden City, as lacking in aggression as these deer. The Angus and Hereford cows in their enclosure, the shire horses and saddleback pigs, the lambs, chicken and farmyard geese together memorialized all the vanished species of domestic animals. At Garden City everyone was vegetarian, not out of moral or religious conviction, but simply because they knew that the provision of grazing land, and the growing of cereal crops for animal feedstuffs, was a wastefully inefficient means of obtaining protein.

When the deer had gone, returning to their forest between the apartment blocks, Halloway stepped down from the bus. Knowing that he must spend the night somewhere, he walked up the steps into the hotel. On the seventh floor he found a bedroom from which he could see both the Sound and the skyscraper towers of the city centre. On the opposite shore the solar reflectors were still faintly visible, drinking in the last glow of the sunset, beacons of a vanished world. He slept through the night, dreaming of glass aeroplanes, their wings like mirrors, that circled the dark air over his head, waiting to carry him away to some sunlit eyrie among the clouds.

THE NEXT MORNING, after an early start, Halloway pressed on towards the city centre. He felt refreshed and confident again, fortified by an exotic breakfast of grapefruit juice, beans and peaches taken from the shelves of a nearby supermarket. Vaguely prudish about eating meat, he decided against opening any of the cans of pork and beef, the limitless varieties of salmon, tuna and sardine.

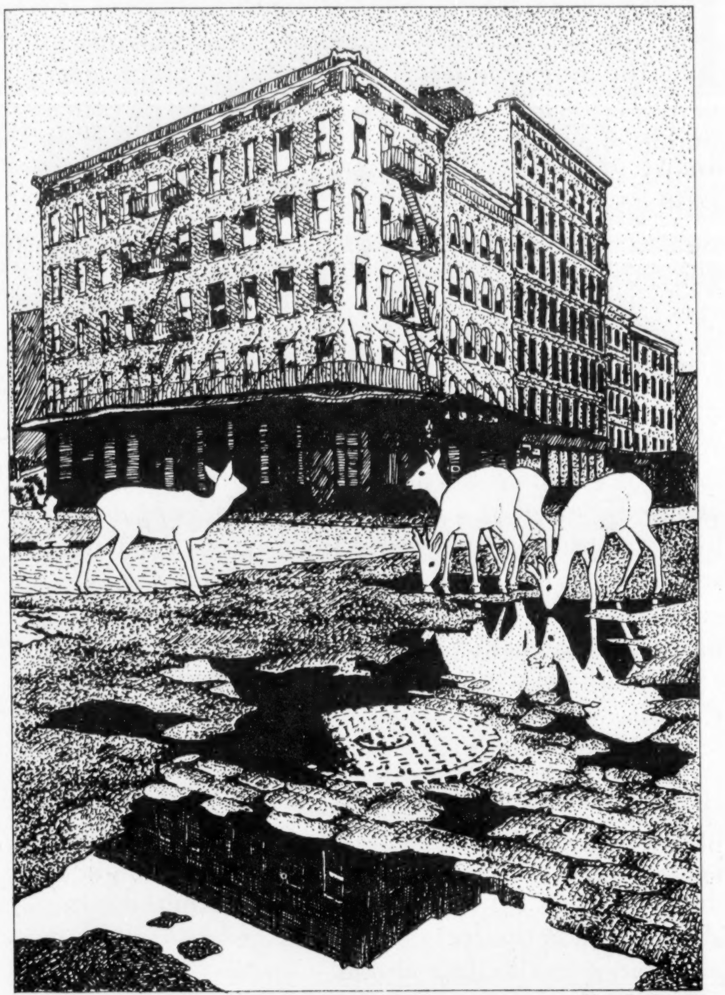
Bright sunlight filled the streets, picking out the vivid colours of the wild flowers growing in profusion from the cracked sidewalks. Despite these embellishments, the city's character had begun to change. Fastening his jacket across his chest, Halloway moved forward more cautiously. Above him, on all sides, were the massive structures and heavy technology of the late Twentieth Century – highway interchanges and bridge approaches, sixty-storey hotels and office-blocks. Between them, almost out of sight on the ground level, was a decaying under-stratum of bars and pin-table arcades, nightclubs and clothing stores. The cheap facades and neon signs had long since collapsed into the roads. A maze of narrow side-streets ran off in all directions, but by following only the main avenues he soon lost his bearings. A wide road raised on concrete stilts carried him high into the air, and changed course in a series of giant loops. Plodding around this curving viaduct, a cambered deck eight lanes wide, Halloway wasted nearly an hour in returning to his starting point.

It was at this time, shortly after he left the cloverleaf by an emergency staircase, that Halloway came across the first of the strange monuments he was later to find all over the city. As he stepped down from the pedestrian exit, he noticed that a nearby parking-lot had been used as a municipal dump. Old tyres, industrial waste and abandoned domestic appliances lay about in a rusty moraine. Rising from its centre was a pyramid of television sets some sixty feet high, constructed with considerable care and an advanced sense of geometry. The thousand or so sets were aligned shoulder to shoulder, their screens facing outwards, the combinations of different models forming decorative patterns on the stepped sides. The whole structure, from base to apex, was invaded by wild elders, moss and firethorn, the clouds of berries forming a huge cascade.

Halloway stared up at the rows of television sets, a pyramid of dead eyes in their worm-riddled cabinets, like the eggs of some voracious reptile waiting to be born from the bland globes embedded in this matrix of rotting organic matter. Pulled apart by the elders, many of the sets revealed their internal wiring. The green and yellow circuitry, the blue capacitors and modulators, mingled with the bright berries of the firethorn, rival orders of a wayward nature merging again after millions of years of separate evolution.

Little more than half a mile away, in a plaza between two office buildings, Halloway found a second pyramid. From a distance it resembled a funeral pyre of metal scrap built from hundreds of typewriters, telex machines and duplicators taken from the offices around the plaza, a monument to the generations of clerks and typists who had worked there. A series of narrow terraces rose one above the other, the tiers of typewriters forming ingenious baroque columns. Brilliant climbing plants, lobster-clawed clematis and honeysuckle with pink and yellow flowers, entwined themselves around the metal colonnades, the vivid blooms illuminating this memorial of rust.

Halloway mounted a staircase of filing cabinets to the upper terrace of the pyramid. On all sides, in the nearby streets and on the raised pedestrian areas above the plaza, an extraordinary vegetation had taken root. Dahlias, marigolds and cosmos flourished among the cracked paving-stones and in the ornamental urns outside the entrances to the office blocks. Along a three-hundred-yard section of the avenue all the cars had been cleared aside, and a field of poppies sprang from the broken asphalt. The bright, funereal flowers extended in a blood-red carpet down the line of hotels, as if waiting for a demonic visitor. Here and there an individual car had been picked out by this mysterious and profligate gardener, its windshield and windows knocked in and its cabin packed with blooms. As vivid as an explosion in a paint-shop, blue and carmine flowers and yellow-ribbed leaves crammed the open windows, mingled with tilting sunflowers and the vines that circled the roof and radiator grille.



TOM PARKER

FROM A SIDE-STREET a quarter of a mile away came the sounds of collapsing masonry. Falling glass split the air. Halloway leapt down from the pyramid, holding to a column of typewriters as the road vibrated under his feet. The slow avalanche continued, the rumble of falling brickwork and the brittle ringing of breaking glass. Then Halloway heard the heavy beating of what he guessed was some kind of huge engine, throbbing with the same rhythm as the motor he had watched his father running in his workshop years before. It moved away, breaking through some glass and masonry obstruction in its path. Already the first dust was billowing from the end of the street, lit by thousands of coloured petals.

Halloway climbed into a nearby car, waiting as this machine moved away. In the deserted city the noise of the assault had carried with it an unmistakable violence, as if some huge and ugly creature was venting its anger at random on the buildings around it.

'Halloway, time to go . . .' Already he had decided to leave the city and make his way home. Once he had crossed the river he would be safe.

When the streets were quiet again, and the cloud of petalled dust had drifted away down the avenue, Halloway set off, leaving the monument of typewriters and telex machines behind him. He ran silently through the field of poppies, as the last petals fell through the unsettled air around him.

When he reached the side-street he found the roadway littered with human figures. Masonry and broken glass, sections of store window as large as his sailplane's wings, lay among the crushed flowers.

Most of the clothing stores that lined both sides of this narrow street had been attacked, their glass fronts and window displays ripped out by some giant implement.

Everywhere the plastic mannequins lay in the sunlight, limbs crushed by the tracks of the machine, polite expressions looking up from the glass and masonry.

Frightened for the first time by the sight of violence, Halloway ran towards the river, and by luck found the open span of a large road-bridge that carried him away from the city. Without pausing to look back, ears listening for any sound of the machine, he sprinted along in his coloured sneakers. Half-way across the bridge he slowed down for the first time to catch his breath. The cloud of petals was still drifting eastwards between the office blocks. Halloway searched the northern suburbs for the mirror-sheathed building into which he had crashed, regretting that he would have to leave the sailplane among these anonymous streets patrolled by this violent machine.

Angry with himself, he pulled off his fleece-lined jacket and hurled it over the balustrade. It fell into the dead water like a sad, brilliant bird. Already he looked forward to his return to Garden City, with its civilized people and sane behaviour. Thinking back, his aggressiveness at the gliding championships embarrassed him.

'. . . too eager for action at any cost,' he reproved himself as he strode along. 'In future check that, Halloway. . .'

He left the bridge and set off eastwards past the dockyards and warehouses. He had entered an area of single-storey factories and cheap housing, chemical tank-farms and electrical sub-stations. All around him, as well, were the monuments. He was crossing a plain of these memorials, pyramids of domestic appliances and car tyres, machine tools and office furniture that had been erected on any available patch of waste ground. Ignoring them, and their ambiguous flowers, Halloway pressed on. Already he could see the collapsed suspension bridge that marked the gateway to the Sound.

SHORTLY BEFORE NOON, when the river crossing was three miles behind him, Halloway came across the airport. As he approached the perimeter fence he could see the control tower, and the tails of parked airliners as high as three-storey buildings. The entire surface of the airport, the concrete runways and grass verges, was covered with thousands of automobiles. Variants of no more than two or three models, they stretched away in a huge metallized dream.

Curious to see the airliners, Halloway followed the perimeter fence towards the entrance. He guessed that the cars had been new models fresh from the production line, stored here by the manufacturers when the oil tap had been turned off. With luck, one of the cars might start for him.

Now that he had left the city, Halloway began to relax again. The airport was a zone that he found curiously reassuring, and in some obscure way made up for the loss of his sailplane. He visualized his father landing and taking off in one of the single-engine aircraft parked nose-to-tail on the other side of the perimeter fence.

At the airport entrance, in the centre of a traffic island, Halloway found the largest of the pyramids he had seen so far. Well over one hundred feet high, the memorial had been constructed entirely from automobile radiator grilles, a tour-de-force of ironic humour. Row upon row, the grilles rose to the apex, cunningly welded together to form staircases and internal galleries. For once, the tropical flora had barely gained a purchase on the base of the pyramid, and the still-gleaming chrome formed a brilliant lacework.

Impressed by the structure, Halloway made his way around it into the airport. Service roads led in all directions to the terminal buildings and air-freight offices. Fuel tankers and breakdown vehicles blocked the narrow lanes. Losing himself in this maze, Halloway decided to climb to the roof of a ten-storey car-park whose canted floors spiralled up into the air behind the terminal buildings.

As he passed the elevators on his way to the staircase, Halloway without thinking touched the call button. To his surprise, the doors promptly responded, opening without any hesitation on well-oiled castors. The interior of the elevator was clean and well-maintained, the control panel freshly polished.

Listening to the faint drumming of an electric generator somewhere above the shaft, Halloway gathered his courage together. There was something seductive about this immaculate compartment, and already he was becoming impatient with himself for turning tail and leaving the city at the first alarm. Sooner or later he intended to come to terms with whatever creature prowled its deserted canyons, and this car-park would make a good observation post.

Stepping into the elevator, he inspected the control panel and pushed a button at random.

WITHIN LESS THAN A MINUTE he had ridden to the seventh floor and stepped out into what he soon discovered was a museum of automobiles. At first glance the cars were indistinguishable from the thousands of vehicles he had passed that day. But as he walked through the dim light, seeing his reflection in the burnished cellulose and waxed leather, he realized that he had stumbled on to a unique private museum. The sixty or so cars on this canted deck were all exhibition pieces, sitting squarely on inflated tyres, antique coachwork lovingly restored.

'Pierce Arrow . . . Bugatti . . . Hispano-Suiza . . . Chevrolet Impala . . .' Aloud, he read out the names from the manufacturers' medallions. Many of the cars dated back well over a century to the dawn of the automobile age, huge perambulators of brass and steel with high seats and coaching lamps larger than their diminutive engines. Others, slab-decked saloons and limousines, were as new as the models that covered the runways of the airport.

Cord. Stutz. Chrysler Imperial. Halloway climbed the deck to the eighth floor. More cars, all lovingly waxed and polished, faced each other through the gloom.

[more→]

The one exception was parked in the centre of the ramp, a grimy six-wheeled breakdown truck with a heavy crane mounted on its rear platform. The engine cowling was still warm. Halloway opened the driver's door; on the seat were a toolkit and a set of maps of the city marked off into various zones. Ignition keys hung from the dashboard, and from the whole compartment came the raw but potent odour of carbonized oil, gasolene and engine coolant.

Sitting behind the steering wheel, Halloway felt the controls, trying to remember something of the casual expertise with which he so easily impressed the gang of ten-year-olds who watched him demonstrate how to drive.

Suddenly the engine was alive, thundering out between the concrete decks as if trying to shake itself apart. The heavy vehicle was vibrating fiercely, and the unlatched door bumped against Halloway's elbow. A blaze of lights lit up the dashboard. Gripping the wheel cautiously, Halloway released the handbrake and let the truck roll forward down the concrete incline, pressing the accelerator as the vehicle moved along at a steady two miles an hour.

WITHIN THIRTY MINUTES he was driving around the airport at speed, roaring along the perimeter roads and down the one exposed section of runway. Flocks of startled ducks and geese rose from the reservoirs to the east of the airport, fleeing from the noise of the careening vehicle. When he first emerged from the car-park the truck had come to a halt, and it had taken Halloway some time to discover that the gear lever was in neutral. He soon learned to engage it, and set off at breakneck pace, slamming in and out of the parked cars. The heavy truck and its wildly swinging crane, steel hook lashing about, sent up a spray of rust from the cars kicked out of their way. The forward power of the vehicle, after the agile but passive motion of the sailplane, astonished Halloway. The slightest pressure of his foot on the accelerator sent the truck hurtling ahead. It was the raw energy of the machine that most impressed him, this gut-driven dynamo totally at one with the city across the river.

CARRIED AWAY by his new-found determination, and confident that he could take on any opponent now, Halloway headed out of the airport. As he left the main gates he was already moving at sixty m.p.h. Too late, he released the accelerator as the road veered off to circle the traffic island with its pyramid of radiator grilles. Trying to slow down, he plunged across the grass verge, the concrete kerb almost rolling the truck on to its side. It hurtled forward, the crane's hook and heavy chains thrashing the cabin behind Halloway's head. He clung to the wheel, face hidden behind his arms, and felt himself flung across the cabin as the truck struck the lowest tier of the pyramid. It tore out a dozen radiator grilles, which hung like trophies from the dented fenders as it swerved away, ran head-on into the steel pylon of a route indicator and came to a halt on its side, cabin buried in the soft earth.

HE WAS WAKING from a dream of powered flight.

He soared across a dark, windless sky. Through the rigging and fuselage struts behind his head came the steady beat of an engine. Beside him in the cockpit a man was crouching over the controls, as if hiding himself from Halloway. When he tried to see the face of this mysterious pilot the aircraft banked steeply, throwing Halloway against the canopy. Searching for a way to escape from the aircraft, he realized that it was built of glass, and that he could see the stars through the wings and fuselage. Unable to restrain himself, he seized the man's shoulder and tried to wrest the control column from him. As they struggled together the aircraft plunged across the sky, its engine screaming . . .

HE WOKE TO FIND HIMSELF in a dimly lit cabin, lying on a bed attached to the panelled wall. Leaning over Halloway, pulling with concern at his shoulder, was a young man about five years older than himself, a tall, slimly built Negro with an expression of wary concern on his shy but intelligent face.

Rest – you've landed safely.

A line of scarlet letters, in a stylized computer typeface, glowed in Halloway's eyes, hovering in the air two feet from him.

Can you hear me? You're not flying now.

Halloway nodded weakly, gazing at the messages that seemed to emerge from the man's hand. Although there were windows in the cabin the air outside was almost opaque, as if they were contained by yet another building. Twenty feet away a second ceiling tilted across the sky.

'There was an engine on the glider,' Halloway explained. He sat up, pointing to the roof of the cabin. Somewhere above him there was the steady drumming of an internal-combustion engine. 'I can hear it now. . . '

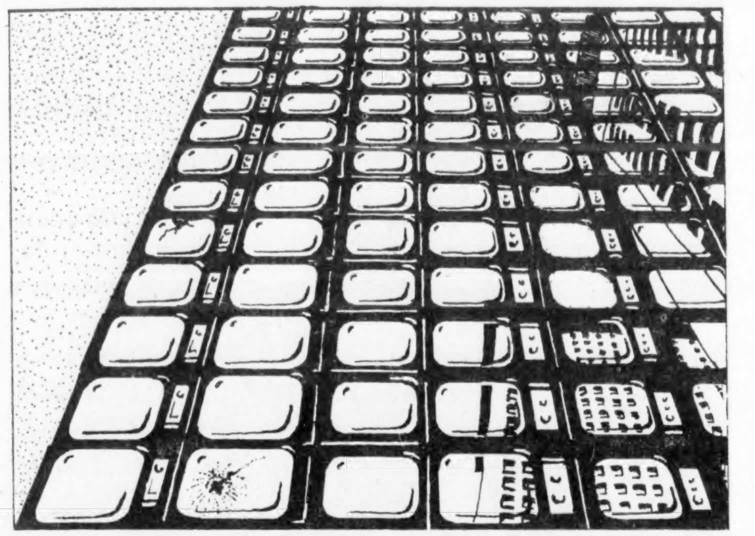
Lights flickered in the Negro's palm. Again the strange alphabet sorted itself into a message. His pensive eyes presided over these reassembling letters as if over the anagrams of stigmata.

There is a power generator on the roof.

As if to reassure Halloway, he pressed a wall switch.

When the electric light – an antique tungsten-filament glow – came on in the cabin Halloway examined his surroundings. He was lying on a bunk in a large land-cruiser, one of a group drawn up together on what he guessed was the top floor of the car-park. In front of him, beyond a small kitchen, was the driver's compartment, the steering wheel and instrument panel below a high windshield.

Sitting beside him, clearly relieved to see Halloway regain consciousness, was the tenant of the cruiser. The left side of his face was covered by a fretwork of notches, minute cuts clearly inflicted during his childhood. At first Halloway assumed that they were some kind of tribal insignia, but later he learned that they were the scars left by a serious automobile accident.



With his intelligent face and curiously unfocused eyes, which seemed to be fixed on some point within his mind, he reminded Halloway of a circus clown without his makeup. He sat here in his land-cruiser with the same vaguely melancholy posture of the clowns whom Halloway and his friends visited in their trailers whenever they toured Garden City. As he gazed down at Halloway with his alert but neutral expression he looked as if he had been alone too long, and was unsure how to respond to the physical presence of another human being.

He touched Halloway's shoulder, obviously convincing himself that his visitor posed no threat.

Now – are you all right?

'I'm a lot better. I guess it was your truck I crashed.'

His rescuer waved this aside. He seemed about to speak, but checked himself. In one hand, almost hidden between his slim fingers, was a pocket calculator. With surprising siwftness, he tapped out a message, which flashed up on the alphanumeric display.

Forget it. There's not exactly a shortage here.

As he gazed through the window of the cruiser Halloway had the distinct impression that this solitary young mute was a prisoner here, high above this museum of cars in the centre of the abandoned airport. His fingers fluttered across the keys of the calculator. As each sentence came up it was glanced at and quickly erased, fingers flicking away in this reverse Braille. Obviously he was used to holding long conversations with himself.

'I'm sorry about the truck,' Halloway said. Remembering the frightening violence he had witnessed that morning, he asked cautiously: 'Do you live here? What's your name?'

Olds.

'Olds? What, as in –?' Halloway laughed, despite himself, but the young Negro nodded, clearly taking no offence. Joining in the joke, he touched the scars on his scalp. Fingers flicked across the keyboard.

Yes. As in Oldsmobile. Ten years ago I renamed myself.

He stared at the illuminated message, his mind drifting away. An expression of regret hovered around his faint smile.

'Why not?' Halloway said encouragingly. 'I like it, it's a good name.' He looked at his watch. It was after two o'clock. He felt drawn to this solitary young Negro, but it was time to be moving on.

'Olds, I ought to be going.'

All right. But first have some food.

THEY LEFT THE CABIN and stepped down on to the tenth floor of the car-park. Four of the land-cruisers were drawn up to form a private enclosure. From the balustrade Halloway looked down at the thousands of vehicles that covered the airport.

The breakdown truck lay on its side by the pyramid of radiator grilles. He took for granted that Olds had constructed these monuments. On trestle tables beside the land-cruisers lay an extensive selection of electrical parts – dynamos and transformers, fuse-boxes and switching units. Power cables trailed across the floor, running from the generator on the roof to a barbecue in the centre of what he assumed was Olds' dining area. Rotating on the spit was the body of a small deer. The fused flesh gleamed like polished oak. Olds beckoned Halloway to a chair, and began to cut steaks from the carcass.

An hour later Halloway had finished the most intoxicating meal of his life, and made his decision to postpone any return to Garden City for as long as possible. After the pallid vegetarian cuisine of his childhood, the flavour of venison and animal fat acted on him like adrenaline. Surrounded by the bones and meat scraps, he felt like the early pioneers who had colonized this land and built its cities.

Olds had watched him eat with obvious pleasure. At intervals, as he urged him to take second and third helpings, his right hand flicked out some brief message to himself on the calculator, as if he were transcribing a commentary on a second life going on inside his head.

During their meal he told Halloway about himself, and how as a boy of five years old during the final evacuation of the city he had been knocked down by a housewife driving her Oldsmobile to the neighbourhood scrap-yard. Thus he had become the world's last traffic casualty. Fifteen years later, after a long and incomplete recovery from his brain injuries, he left the technical training centre at the commune hospital fifty miles to the north of the city and made his home among the thousands of cars parked on the runways of this abandoned airport. Here, moved by some profound compulsion, he spent his time putting together this museum of cars, perhaps in an attempt to find the missing sections of his mind. His ambition, he explained to Halloway, was to have a running model of every make of car ever manufactured.

Only then will I come to terms with my accident.

He flashed a self-deprecating smile and added:

After that I can learn to fly.

Halloway nodded sympathetically, unsure whether Olds was pulling his leg. This clever, shy but self-confident man seemed to be all there as far as Halloway could tell. When the had finished the meal Halloway asked Olds to take him on a tour of the museum.

'You repaired all these yourself? It's hard to believe – in the first place, what about the fuel?'

Olds gestured casually at the sea of vehicles that stretched to the horizon on all sides of the car-park.

There are five million cars in this city alone. Almost every tank still has a little gas in it.

Halloway walked down the line of cars, gazing at his reflections in the lovingly refurbished radiator grilles, hub-caps and chromium trim. Olds led the way, pointing out a rare Mercedes 600, a Rolls-Royce Silver Cloud, a Facel Vega. He was clearly proud to show off his collection, but at the same time Halloway noticed that he seemed slightly bored by these these vehicles. His eyes were forever straying to the moss-covered airliners parked by the terminal buildings.

'And you're sure they all run?' Halloway asked. He pointed to a resplendant limousine. 'What about this one – Daimler Majestic?'

With remarkable speed, Olds leapt behind the wheel of the car. Within seconds its engine roared out, headlamps pulsed, momentarily blinding Halloway. The horn sounded imperiously.

'Olds, it's unbelievable!' Halloway congratulated him. 'Let's see you try another – this Pontiac Firebird.'

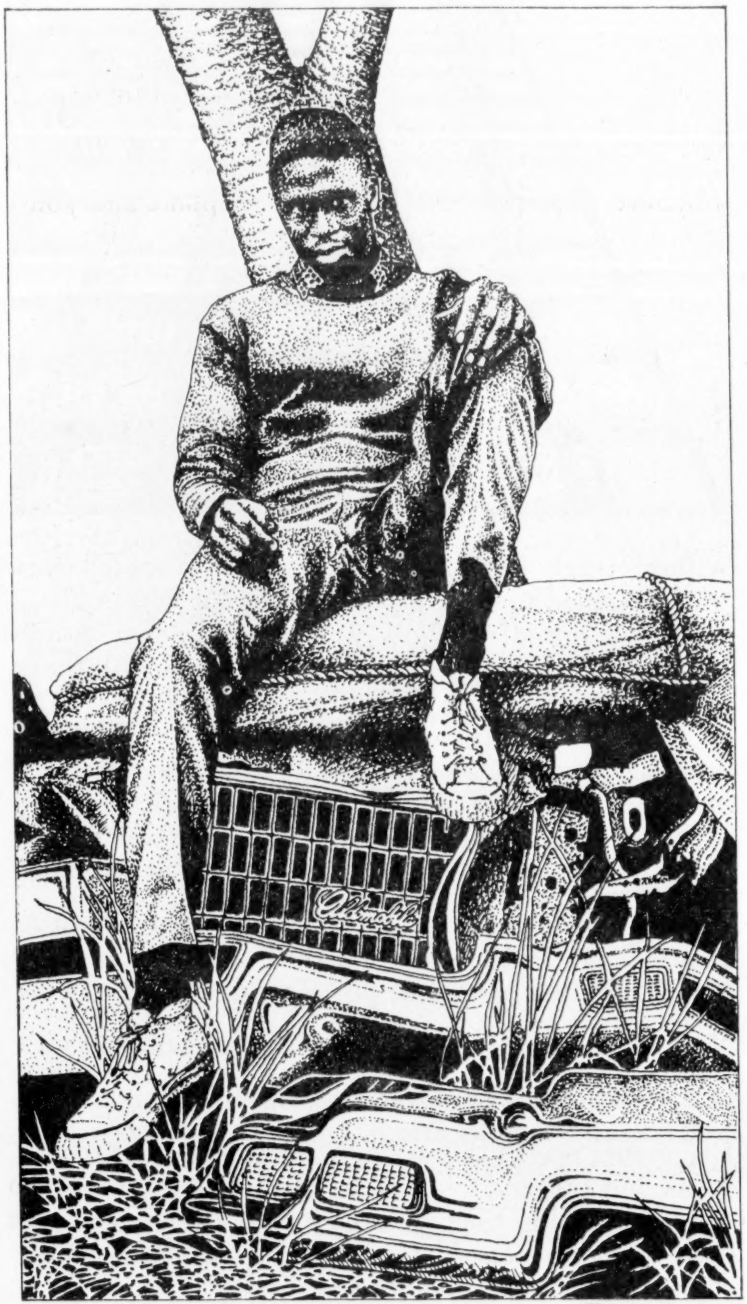
For the next thirty minutes the two men moved through the museum, Halloway shouting and pointing to one car after another, Olds leaping like an excited faun, an automotive Ariel, from one driver's seat to the next, switching on the ignitions and bringing the engines to life. Each car he left with its motor racing and headlamps full on. First a dozen cars came alive, then more than thirty, and finally the entire eighth and ninth decks of the car-park. The roar of the engines, the exhaust swirling in the headlamp beams, the vibrating floors and balustrades, the smell of burning fuel and the noise booming out over the deserted airport, made Halloway feel that the entire city had begun to spring to life, re-starting itself under the hands of this young recluse.

Finally, out of curiosity rather than cruelty, Halloway shouted out the last name. 'One more, Olds! What about –' In the absence of the car, he pointed at random. '–Oldsmobile!'

Immediately Halloway regretted the prank. Too late, he saw the rictus on Olds' face. Sitting behind the wheel of a white Galaxie, he began to pound the controls, angry with the car when it failed to start on its own. When Halloway reached him he had slumped back and was already moving into a deep fugue, mouth agape, the blood in his face making a livid lace-work of the scars. On the seat beside him, like some hyper-excited small animal, his right hand flicked out a desperate message on the calculator.

'Olds . . . it doesn't matter!'

Halloway pulled open the door and tried to calm him. Bizarre messages glimmered among the headlamps as he sank into unconsciousness, the engines of a hundred cars throbbing around him in the exhaust-filled air.



TOM PARKER

Teach me to fly!

WITHIN AN HOUR Olds had recovered. Sitting back on a car seat beside the barbecue, he touched his face and scalp, feeling the tracery of scars as if making sure that the jigsaw was once again in place. After dragging him to the elevator and taking him back to his lair, Halloway had moved among the cars, switching off the engines one by one. When the building was silent again he leaned against the balustrade, looking out at the distant towers of the city. Despite the moss-covered airliners by the terminal buildings, Halloway noticed that he was no longer thinking of his quest for his parents' apartment. Already the elements of a far grander scheme were forming in his mind.

They sat together in the dusk, listening to the steady beat of the generator on the roof, their faces lit by the glow of the barbecue.

With the same innocent guile that he used on his grandfather, Halloway said: 'Olds, you're a genius with cars. But can you start up anything else?'

Olds nodded soberly at Halloway, not taken in by him for a moment. He inspected his slim hands, as if resigned to the talents multiplying from his fingertips.

Anything. I can make anything work.

'I believe you, Olds. We'll find my sailplane and you can put an engine and propeller on it. Then I'll teach you how to fly.'

EARLY THE NEXT MORNING Olds and Halloway set off together from the airport. Olds selected, apparently at random, another breakdown vehicle from his stable of trucks and pick-ups on the first floor of the car-park. Into the rear section, where a generator was bolted to the deck, he slung a leather tool-case and reels of power cable. He had recovered from his seizure of the previous afternoon. Something about the prospect of flying had given him back his self-confidence. As they left the airport, circling the pyramid of radiator grilles, he flicked a series of questions at Halloway.

What engine size? How many horse-power?

'I can't remember,' Halloway admitted. Already he was having to pretend that he had flown a powered craft. 'Big enough to drive a propeller. The size of this truck's?'

Far too heavy. I'll find an aero-engine.

They crossed the river and headed northwards through the city. At intervals Olds would check his fuel gauge, stop the truck in the centre of the street and leap out with a siphon hose. He moved around, shaking the parked cars and listening to the swish of fuel.

Once, while Olds was sucking away at his hose, Halloway strolled across the sidewalk to a small bar. A juke-box stood in the doorway, thick dust covering the extravagant plastic front. Halloway pressed the buttons at random, and then wandered off along the street.

When he returned five minutes later Olds had disappeared. The truck stood in the roadway, the engine of the power generator ticking over smoothly. The tool-bag had gone, and cables ran from the generator across the sidewalk.

'Olds! Let's go!'

Then he heard music coming from the bar. There was a jangle of coarse sound, a rapid beat of drums and guitars, and a rock-and-roll singer's voice bellowed across the empty street.

When he reached the bar he found Olds crouched behind the juke-box, tool-kit open on the floor. Like a leather carpet-bag fitted with hundreds of pockets, it seemed to contain every tool ever devised. Olds' arms were deep inside the entrails of the machine, hooking up a series of extension leads to a transformer.

When Halloway put his hands to his ears Olds switched off. He winked at Halloway.

That's only a beginning.

He was as good as his word. As they pressed on down the endless avenues lined with office-blocks, hotels and department-stores, Olds would stop the truck, seize his tool-kit and unwind his cables across the street. In rapid succession he started up three pin-tables in an amusement arcade, a line of washing machines in a launderette, a telex and two ticker-tapes in the ground-floor office of a commercial business, and a complete appliance range in a home equipment store. As if in rehearsal for some lunatic household, mixers whirred, fan-heaters pumped, vacuum cleaners roared, a dozen other gadgets clattered and whistled.

Watching all this, Halloway was impressed by the casual way Olds turned on these devices. They moved northwards, animating these miniscule portions of the city, leaving behind them these happy nodes of activity.

Confused by the noise and excitement, Halloway sat limply in the truck when they reached the mirror-sheathed office block into which he had crashed. The sailplane lay among the cars, its broken wings stirring in the light air. As Olds moved around it, inspecting the inverted cockpit with his gentle but shrewd eyes, Halloway half-expected him to reassemble the glider with a few waves of his screwdriver.

Olds pointed to the humpbacked cockpit, where the strengthened fuselage frame behind the pilot's seat formed a platform whose purpose Halloway had never understood.

This is a real aircraft. Designed to take an engine. But you built it to look like a glider?

'I know,' Halloway lied. 'I couldn't find the right power-plant.'

Olds' quick hands were exploring the interior of the fuselage.

Runs for control lines. A fuel-tank compartment. It's well thought out. And room for both of us.

'What?' Genuinely surprised, Halloway peered into the cockpit.

Behind the pilot's bulkhead there's space for a passenger.

As Olds pointed with the calculator, Halloway stared at what his father clearly designed to be a rear seat. Had his mother and father planned to leave him behind when they flew off? Or perhaps his father had intended to take his son with him, the two of them soaring back to the city together. Puzzled by these discoveries, he noticed Olds watching him in a shrewd but still kindly way. Did Olds really believe that Halloway had designed this powered glider himself? Was he using Halloway in exactly the same way that Halloway was trying to exploit him?

FOR THE TIME BEING it hardly mattered. Halloway took the wheel for the return journey to the airport, after they dismantled the glider and lashed the sections to the truck. The power and noise of the engine erased all doubts. Barely controlling his excitement, he tried to hold down their speed as they raced through the streets.

[more→]

'Olds! Watch this!'

They crossed a section of the roadway planted with poppies, the vivid but sinister flowers extending in front of them for three hundred yards. The bumper of the truck scythed through the flowers, and a dense cloud of petals billowed into the air, staining the sky like a miniature sunset. Halloway turned and made a second run through the poppies, almost standing at the wheel as they hurtled through the whirling petals.

As they approached the centre of the city Halloway drove around the side-streets, hunting out any other of these floral tracts planted here in the broken asphalt by some aberrant gardener. Soon millions of leaves were drifting through the coloured air. There were white streets where they found daisies, yellow avenues filled with a mist of crushed buttercups, blue boulevards which wept a rain of forget-me-nots.

Then, as they emerged from a storm of daffodil petals, Halloway nearly collided into a large industrial tractor moving along the roadway in front of him. Pulling to a halt behind its high rear assembly, he flung Olds on to the dashboard. Halloway switched off the engine, and watched this massive tracked vehicle lumbering slowly through the haze of petals. A hydraulic ram was mounted in front of the motor, fitted with an immense claw that now held a single automobile, carried in the air fifteen feet from the ground.

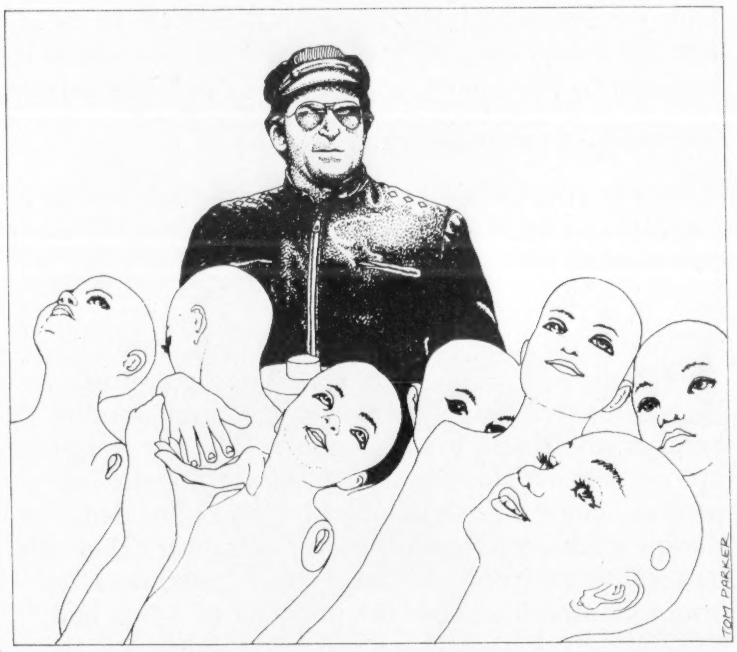
In the control cabin a dark-haired man in a black plastic jacket emblazoned with silver studs was operating the steering levers. His face was barely visible through the whirling petals, and he seemed unaware of the truck stalled behind him. However, when Halloway restarted his engine, intending to overtake the tractor, the driver swung his claw to the right, blocking Halloway with the swinging automobile. Looking up at the man's handsome face, with its hard mouth like a piece of gristle, Halloway was certain that it was this driver, and this terrifying machine, which had destroyed the garment store mannequins the previous day.

Halloway began to reverse the truck down the street, but Olds held his arm warningly.

Follow him. Stillman needs to be given his own way.

As Halloway moved forward, following the tractor, Olds sat back. He had switched off the calculator, and seemed to have forgotten their exhilarating race through the flowers, his mind moving elsewhere, bored by the prospect of whatever was to come.

They emerged into an open square, set in the heart of one of the oldest sections of the city, an area of theatres, bars and cheap hotels. Rising from the centre of the square was the largest of the eccentric memorials to Twentieth-Century technology that Halloway had seen so far. At first glance it resembled a gothic cathedral, built entirely from rusting iron, glass and chromium. As they crossed the square, following the tractor, Halloway realized that this structure was built entirely from the bodies of automobiles. Stacked one upon the other, they formed a palisade of towers that rose two hundred feet into the air.



A group of heavy cranes and a buttress of scaffolding marked out the working face, overlooked by an observation platform reached by a simple elevator. Standing at the rail, and waiting for the tractor to carry its latest contribution to the memorial, was a small, pugnacious man of advanced age. Although well into his eighties, he was dressed like a physical education instructor in immaculate white sweater and well-creased trousers. Inspecting Halloway's glider with a critical eye, he picked up an electric megaphone and began to call out instructions in a high voice to the driver of the tractor.

Olds was gazing up at the monument of cars, shaking his head as if ruefully aware that he and this odd old man were in the same business. He switched on the calculator.

I'll wait for you here. You're about to meet Mr. Buckmaster. Viceroy, czar, and warden of this island.

Halloway waited as the driver climbed down from his cab. Deliberately taking his time, he sauntered over to Halloway, pointing to his red, white and blue sneakers, yellow trousers and shirt covered with petals.

'The Rainbow Kid – you come down from the sky and have yourself a time . . .'

Although twice Halloway's age, with slicked-back hair and a pale skin that would always appear dirty, he had a lazy, youthful aura, as if a large section of his life had passed in his absence and he himself had never aged beyond his twenties. For all his sarcastic manner, he seemed watchful and ready to ingratiate himself at a moment's notice. With his self-directed aggression and stylized swagger he was a type Halloway had never known at Garden City, but which all his reading confirmed was a classic specimen of metropolitan man.

'Take the elevator,' he told Halloway. 'Mr. Buckmaster has been waiting to meet you. He'll want to induct you into his work-force.'

'This monument – and the others? He built them all?'

'*I* built them. Buckmaster merely dreamed up the whole mad idea. Homage to the Chrysler Corporation, Datsun and General Motors. When we've finished, the spirit of Karl Benz will be laid to rest under a million driver's licenses and parking tickets.'

He slammed the elevator grille in Halloway's face and punched the ascend button.

THE OLD MAN in his whites was waiting for Halloway when he reached the observation platform. On a card-table lay a set of blueprints, and Halloway could see that if ever completed the structure would rise some four hundred feet into the air.

The old man beckoned Halloway to the rail. Everything about him, his quick eyes and mouth, his restless hands, was in a hurry. He talked to Halloway as if he had known him for years and was resuming a conversation interrupted only a few seconds earlier.

'It looks a mess, eh? Just a pile of automobiles, a million junkyards are full of them. What do I think I'm doing? Wait and see.' He pointed to Halloway's glider in the back of the truck, where Olds was already tearing away the torn fabric. 'Is that a glider or a power-plane? During the war I built thirty thousand fighters for the government, we were turning them out so fast the Air Force kept the war going just to get rid of them. And that was on top of a hundred airships, cargo-submarines and enough spare parts to give every man on this planet his own robot-assembly kit. Then I re-tooled and flooded the world with wrist-watch TVs, compressed paper houses, a million gimmicks. Techniques of mass production raised to the nth power. Do you remember my protein synthesizer?' He glanced at Halloway, who nodded promptly. 'No, you're too young. No bigger than a suitcase, you put it under your bed at night and it ran off your sweat and body temperature. Somehow it didn't catch on, but I would have fed a starving world, lifted the population of this planet to fifty billion in comfort. I was ready to build them super-cities, the first conurbation conglomerates, the mega-metropolis larger than any individual nation-state. I designed the first collapsible city, interchangeable parts moving around on gigantic rails. Makes sense – if a theatre isn't being used by day, wheel it off and roll on an office-block. Instead of which' – here he raised his ancient hands eloquently to the empty streets – 'they all just gave up and faded away. Goodbye, C20 Man, hello Arcadia, that timid world of water wheels and solar batteries. Not that there's an unlimited future for tidal power. Every time one of those pontoons nods its head the planet slows down a little. The days are getting longer . . .'

He turned away from the rail, and put a hard arm around Halloway's shoulder. 'Now, you've come to work for me? It's too late, I closed down my last design office ten years ago.' He steered Halloway to the elevator, nodding sagely to himself as they rode down together. 'A pity, you could have done great things with those hands. Anyway, you can work for Stillman, there's more than he can do.'

'Well . . .' Halloway glanced at the black-jacketed driver, standing beside the tractor with one hand on the automobile suspended in the air over his head. 'I was thinking of setting up on my own.'

'Good for you – but it's all over. There's nothing to do now but close it down. Give it a humane burial, put up a monument here and there to Twentieth-Century technology, to all those things we took for granted – tyres, engines, TVs, kitchen appliances, automobiles . . .'

His voice wavered for the first time and then stopped, as he gazed up wistfully at his cathedral of cars. Waiting for this strange old man to start again, Halloway remembered that he had seen his combative jaw and dreamer's eyes in the architecture textbooks in his grandfather's library. Buckmaster had been the last of the great entrepreneur-industrialists, part architect and engineer, part visionary, driven on by old-fashioned crankiness, ceaseless originality and a well-developed talent for seizing the headlines. Grandiose projects started all over the world and then abandoned to rivals and pupils, a succession of wives, the third of whom died in a mysterious scandal, lawsuits against any number of governments, plans for the first trans-Atlantic bridge – these were elements in a stormy career spanning nearly seventy years. Although Buckmaster was clearly living a century too late there was something about his unflagging energy and resolve that fired a response in Halloway's mind. He couldn't help contrasting Buckmaster's limitless appetite for steel, power, concrete and raw materials with the self-denying, defeatist lives of the engineers and architects at Garden City. There was even a fringe group of scientific fanatics – the so-called 'heliophiles' – whose ambition was to return energy to the sun by firing off all the old missiles with nuclear warheads, repaying the sun for its billion-year bounty.

HE FOLLOWED BUCKMASTER into the interior of the memorial, uneasily aware that this cathedral of rust might collapse at any time. At the far end of the nave the semi-circle of internal walls had been transformed into a lavish botanical garden. Terrace upon terrace of climbing plants hung from the chassis of the cars, brilliant flowers bloomed in the windows and wheel-wells. The golden bells of forsythia trailed from the windows of grand limousines a hundred feet in the air, the white mist of mile-a-minute vines hovered like steam above the radiator grilles and exhaust pipes.

Apparently unaware that this cascade of blossoms was already transforming his monument into a far more bizarre structure than he had visualized, Buckmaster began to point out various details of the construction. But Halloway was more interested in the hanging garden. A young woman was working at the flowers, taking nasturtium and petunia seedlings from a series of trays and planting them in the doors and windows. As she moved about, climbing up and down a high ladder, Halloway had difficulty in guessing her age. At Garden City the emancipated women wore simple home-woven smocks and jerkins indistinguishable from the men's. With undressed hair and devoid of make-up, their sexual roles were always explicit, desire worn casually on their sleeves.

[more →]

By contrast, this young woman – his daughter Miranda, Buckmaster informed him – was dressed like the heroine of a lavishly costumed period musical. Everything about her, from her extravagant copper-tinted hair in a Pre-Raphaelite cut to her long white neck and embroidered art-nouveau gown, was calculated for concealment and effect, artifice and allure. Later, Halloway discovered that she changed her appearance every day, moving through the deserted boutiques and fashion-houses of the city, modelling herself on the vanished styles of the Twentieth Century. On one day she would appear in a cream cloche hat and Gatsby gown, on another in a lurex blouse, bobby sox and teenager's flared tartan skirt.

Buckmaster introduced Halloway to her. 'Miranda, a new recruit – Mr. Halloway, an aviator from Garden City. Any more like him and I may have to think again about opening my design office.'

As the old man wandered around, nodding at the profusion of flowers, Halloway-searched for something to say. In his yellow trousers and multicoloured sneakers he was as much in costume as Buckmaster's daughter, but he felt gauche and clumsy beside her. Although she was his own age, there was something naive, and at the same time knowing and sophisticated, about Miranda. He guessed that he was the first young man of eighteen she had met, but that she had done a great deal of thinking about the subject and for all her shyness was well prepared to deal with him on her own terms.

'We watched you driving around,' she told him matter-of-factly and without any rancour. 'Killing all those flowers – in a way it must have been fun.'

'Well . . .' Lamely, Halloway tried to apologize. He helped her down the ladder, relieved when she was on his own level. There was something unsettling about the way she had looked down at him, surrounded by the vine-infested cars. 'I didn't realize that they were yours. I'll help you to plant them again – they'll soon grow.'

'I know.' She strolled around him, picking the petals from his shirt, as if removing spots of blood. 'Sometimes I feel like the daughter of some great magician – wherever I touch, a flower springs up.'

Halloway brushed away the last of the petals. His difficulty in talking to her stemmed partly from her ambiguity, the naively teasing sexual come-on, but more from his own inexperience. In Garden City the relations between young people were governed by the most enlightened rules, derived from the teachings of Malinowski, Margaret Mead and the anthropologists who had followed them. From the age of sixteen, in the approved Polynesian style, young people of both sexes lived together openly in the 'long house' dormitories set aside for them until they later chose their marriage partner. Halloway had opted out of this, for reasons he had never understood, so committing himself to the company of his grandparents on one side and the younger teenagers on the other. He had never regretted the decision – there was something far too amiable, far too bovine and uncritical, about the hand-holding tenants of the long house.

Now, as he watched Miranda admiring his coloured sneakers, swirling her embroidered dress around him, he was certain that he was right. That ambiguity she showed, that moody combination of challenge and allure, was exactly what the city was about.

'I saw your glider yesterday,' Miranda told him. 'Crossing the Sound. It was like part of a dream, miles away across the water. Now suddenly you're here, in your miracle shoes.'

'*I* dream about powered flight,' Halloway told her with some pride. 'Olds and I are rebuilding the glider. When it's ready we'll put an engine on it.'

Miranda nodded, gazing up at her hanging garden, as if waiting patiently for the jungle to return. In some way she seemed almost at odds with her father, trying to undo his work and transform it for her own purposes.

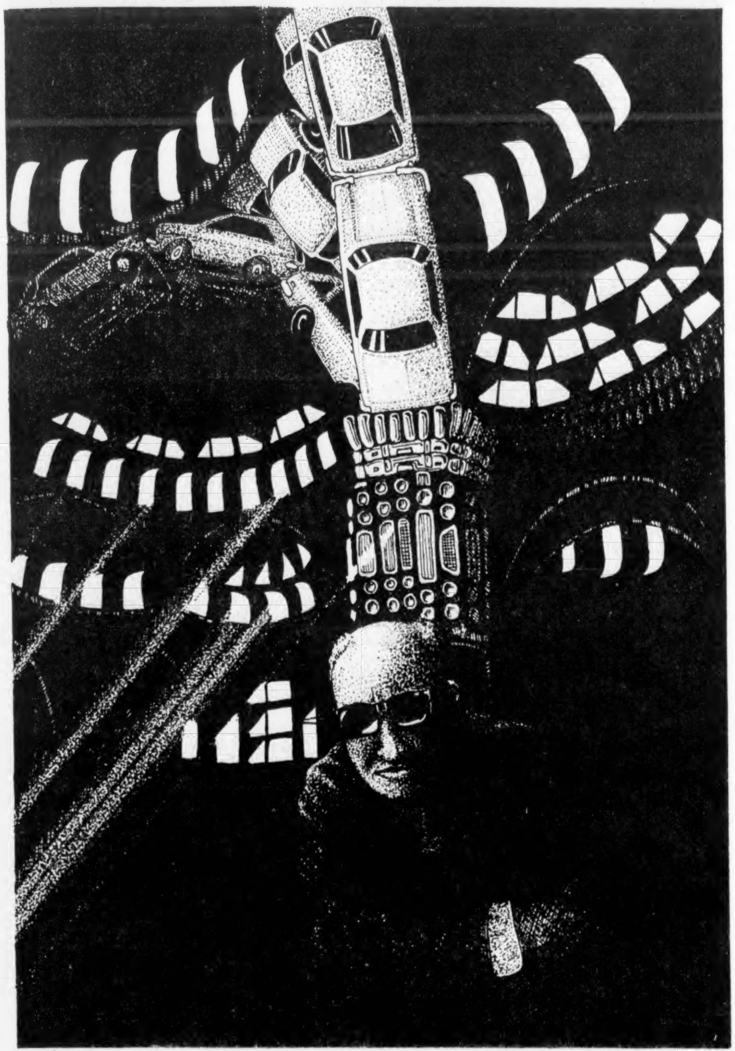
'Halloway . . .' She touched his arm. 'My father's very old. I want him to finish this before it's too late. Stillman's losing interest. Will you work for us for a while?'

THE NEXT DAY Halloway joined Stillman's one-man construction gang. He had said goodbye to Olds, who returned with the sailplane to the airport, and spent the night in one of the small hotels around the square.

Riding on the cowling of the tractor's engine, Halloway squatted in front of the driving cab as Stillman roved the city, searching for the exact models of the cars that Buckmaster had ordered. Each one they carried back to the monument, and Halloway climbed the wall of vehicles and guided Stillman as he steered the largest of the cranes and inserted the car into its place. From the observation platform the old industrialist supervised the work from behind his blueprints. Meanwhile his daughter, dressed for the day in a 1940s business suit, with boxy shoulders and a skirt of brown pin-stripe, her hair in a frizz, moved silently among the flowers in the centre of the memorial, tending the vines and blossoms in this dark, humid arbour.

His involvement with this strange trio surprised Halloway, but he soon realized that each of them played a role in certain unfolding obsessions of his own. Of the three, Stillman with his black jacket and hoodlum style most disturbed and most stimulated him, brooding over a dark dream of the city so like Halloway's own.

As they drove back through the streets on that first day Halloway had an unsettling glimpse of Stillman's unpredictable violence. The massive tractor was clanking down a wide avenue, a yellow taxi-cab held in its claw, when they passed a department store. Halloway was sitting in front of the cab, and was nearly flung to the road as Stillman slammed back the left-hand drive lever and turned the tractor towards the sidewalk. Cars were parked nose to tail along the kerb, but Stillman drove straight into them, knocking them out of his way with powerful left and right swings of the taxi. Gripped by the claw, the battered vehicle showered glass and rust on to the road. Working the levers and throttle with hard and almost spasm-like thrusts of his arms and shoulders,



TOM PARKER

Stillman drove the tractor towards the store. His jaws champed rapidly on a piece of gum, but his face was deliberately expressionless, part of a continuous stylization of gesture and movement that Halloway had never seen before and that excited and disturbed him at the same time.

A group of mannequins sat in the store window around a table, part of a mock dinner-party that had started twenty-five years earlier and never proceeded beyond the waxy hors d'oeuvres. The polite poses and prim over-elegant manners clearly pulled a hair-trigger in Stillman's mind. As the plate glass collapsed into the sidewalk he slung aside the taxi, sending it rolling across the street, and then began to sweep the mannequins out of the window, scattering them on to the sidewalk.

As he watched the destruction of these smartly attired female figures, Halloway was thinking of Miranda and her obsessive changes of costume. Was this her way of containing Stillman, or of provoking him? Stillman stared at her with a kind of humourless irony, as if forming in his mind a series of obscene jokes about her. Only his deference to the old industrialist seemed to prevent him from assaulting Miranda.

Seizing the yellow taxi again, Stillman set off down the street, the shattered mannequins lying in their tailored rags like the well-to-do victims of a terrorist attack in a fashionable shopping centre. Halloway was shaking with excitement, barely able to keep his seat on the engine cowling. For all his fear of Stillman, he knew that he was half-hoping that he would be violent again. He imagined the city filled with people, their lives invigorated by just this kind of callous and stylized aggression. When they passed another clothing store with a group of mannequins in the window he tapped the winshield and pointed them out to Stillman.

Later, when Buckmaster and his daughter retired to their third-floor suite in a hotel facing the monument of cars, Stillman and Halloway wandered through the dusk towards a nearby park. Stillman broke into a gunshop, and from the racks behind the counter took down a sporting rifle and shotgun. Pockets filled with cartridges, they strolled into the park, and in the evening light shot quail and a small deer. The roar of gunfire, the coarse smell of the cordite and the hard recoil against his arms and shoulders, the terrified movement of thousands of birds and animals as they fled through the forest, together filled Halloway's head with fantasies of violence.

Stillman occupied a penthouse apartment on the twentieth floor of a block facing the park.

'It's a long climb,' he warned Halloway, 'But I like to sit up there in the morning and watch dinner grazing down below.'

On the open terrace they lit a fire with pieces of furniture taken from the other apartments. Around them the walls of the city rose into the night. As he roasted the quail and turned the deer on its spit Halloway could see the flames reflected in thousands of darkened windows, as if the night were on fire. They sat together in armchairs by the embers flaring in the wind, wind, and Stillman talked about the city, of the period he could just remember when it had been filled with more than a million people, the streets packed with traffic and the skies with helicopters, a realm of ceaseless noise and activity, competition and crime. It was here, in fact, as a young student at the school of architecture, that Stillman had first met Buckmaster. Within six months he had killed the industrialist's third wife in a lovers' quarrel. The last murderer to be tried and convicted before the emigration from the cities began in earnest, he was sentenced to twenty years' imprisonment. Eighteen years later, rotting away in an empty penitentiary, the sole prisoner looked after by one aged warder, he had been freed by Buckmaster, who took him on his own parole in a strange gesture. Now he worked for the old man, operating the heavy lifting equipment and helping him to build his monuments to a vanished age of technology. All the while he could barely contain his anger at finding the city he had longed for through so many years an empty and abandoned shell.

Halloway listened to him without speaking. When Stillman finished and lay back in his armchair, staring at the embers of the fire and the bones scattered at his feet, Halloway walked to the balustrade and looked at the dark buildings around them.

'Stillman – it isn't too late. It's all waiting for us here. We can start it up again. Olds can bring it back to life for us. . . .' ■

[To be concluded next issue.]

Craft

HANDSPINNING

by Diana Sloat

Spinning has been a stagnant area for years, the American books and material all re-writes of Western Europe's traditional methods and equipment. But now there is new and exciting information, the result of research, technological improvements, innovative ideas, and a keen desire to share them. It's all inexpensive, and it's making me and others more enthusiastic and much better spinners. Hope it works well for you.

Handspinner's Handbook

Superb wheel-spinning instruction — she gives the kind of information usually left out of "how-to" books. Not only does she tell you the principles involved, but how it looks and feels when it's right or wrong, and how to correct it. It's like having a personal lesson from Bette Hochberg herself.

The "long draw," the fastest, most efficient and consistent method of spinning is covered in depth, as is how to condition and adjust a wheel, and how to prepare and spin some 20 different natural fibres, animal and vegetable.

HANDSPINNER'S
HANDBOOK

Handspinner's Handbook
Bette Hochberg
1976; 66 pp.
$4.70 postpaid
from:
Straw Into Gold
P.O. Box 2904
Oakland, CA 94618
or Whole Earth

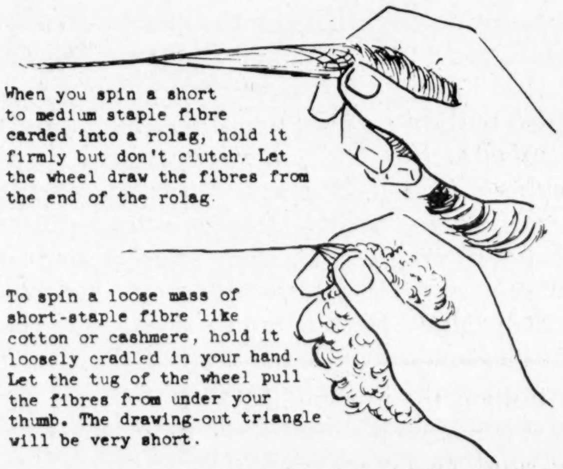
THE DRAWING-OUT TRIANGLE. You must learn to observe what happens in the area where the fibres are being drawn out of the mass, and being twisted. This area usually assumes a somewhat triangular shape. The triangle must be long enough to allow the individual fibres to slide freely past each other as they are being drawn into the twist. So the length of the triangle will change when you change from one fibre to another.

The number of fibres that are in the triangle at any moment determines the thickness of that portion of yarn.

Keep your eyes always on the drawing-out triangle as you spin:

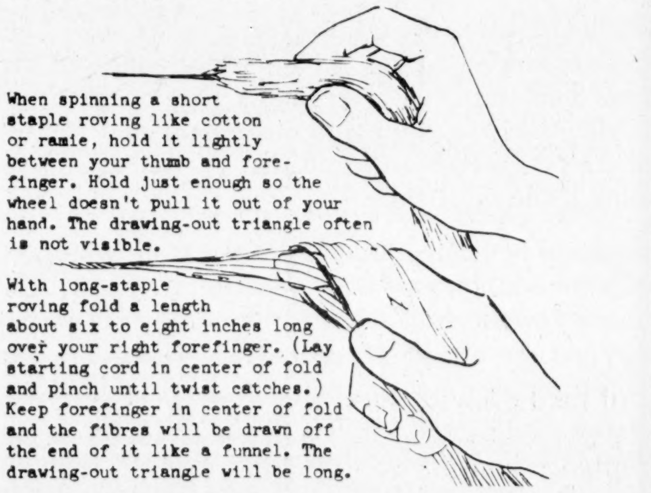
> If the twist runs up too far and the triangle becomes shorter than the length of the staple of fibre, you won't be able to continue drawing back the mass of unspun fibre.
>
> If you draw the triangle out longer than the length of the staple, the yarn will get thin and drift apart or break.
>
> If suddenly there are too many fibres in the triangle they will form a lump.
>
> If suddenly too few fibres are in the triangle, that portion will become thin.

When you understand this, you will find it really very easy to spin anything. There are no "difficult fibres" — only inadequate understanding of them.



When you spin a short to medium staple fibre carded into a rolag, hold it firmly but don't clutch. Let the wheel draw the fibres from the end of the rolag.

To spin a loose mass of short-staple fibre like cotton or cashmere, hold it loosely cradled in your hand. Let the tug of the wheel pull the fibres from under your thumb. The drawing-out triangle will be very short.



When spinning a short staple roving like cotton or ramie, hold it lightly between your thumb and forefinger. Hold just enough so the wheel doesn't pull it out of your hand. The drawing-out triangle often is not visible.

With long-staple roving fold a length about six to eight inches long over your right forefinger. (Lay starting cord in center of fold and pinch until twist catches.) Keep forefinger in center of fold and the fibres will be drawn off the end of it like a funnel. The drawing-out triangle will be long.

Spinning Wheel Primer

For wheel makers or buyers this excellent technical little book gives results of Alden Amos' research on the advantages of some commonly available wheel types and their bobbin-flyer or spindle systems. It includes analyses of their versatility in spinning different fibres, their RPM and drive ratio capabilities and how close these come to meeting a production standard. It also includes the formulas for figuring it yourself. Valuable information for anyone interested in optimum spinning speed through knowledge of how a particular wheel can perform.

His own bias is clear in the type wheels he chooses to make. What's not so clear is the number of different wheels he has tested, repaired or rebuilt in arriving at this bias.

Spinning Wheel Primer
Alden Amos
1976; 25 pp.
$4.70 postpaid

from:
Straw Into Gold
P.O. Box 2904
Oakland, CA 94618
or Whole Earth

We tend to think of hand-spinning as an old-time craft, no longer a necessity — an archaic, hobby sort of thing. In actuality, hand-spinning is the only way to produce hand spun yarn, an item much in demand. At the time of this printing, good handspun yarns sell for at least a dollar an ounce. Considering that raw fleece may be obtained for about a dollar and a half a pound, there is some economic motivation for taking up the craft.

•

A beginning to intermediate spinner should produce 150 yards of six Turns Per Inch (TPI) yarn per hour.

An intermediate to advanced spinner will do 250 yards of six TPI yarn per hour.

An advanced spinner will produce 350 yards of six TPI yarn per hour.

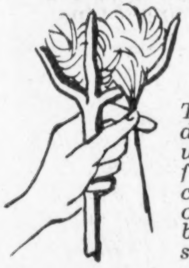
A production spinner should produce 500 yards of six TPI yarn per hour, or should enter some other field of endeavor.

Handspindles

So-called "primitive" people have developed very fast and efficient methods of hand spinning with the simplest equipment. This is the best, most thorough (and only) book on the types, history, and use of handspindles in different cultures. Also for teaching yourself to use drop spindles of different kinds, supported spindles, and a distaff! You'll find the same precision and clarity as her wheel-spinning instructions in Handspinner's Handbook *above. The section on preparation of natural fibres for spinning overlaps with it, so buying two books isn't necessary if you're starting out.*

HANDSPINDLES
BETTE HOCHBERG

Handspindles
Bette Hochberg
1977; 73 pp.
$4.70 postpaid
from:
Straw Into Gold
P.O. Box 2904
Oakland, CA 94618
or Whole Earth



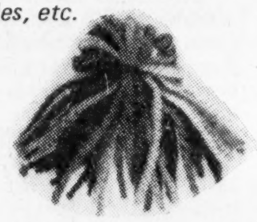
The simplest form of distaff is a forked stick with one or more smaller branches growing from it. A mass of short uncombed fibres can be nestled into the branch, as in a basket, or combed fibres can be wrapped around the branches. This style is excellent for short staple wool, uncombed cotton or linen tow.

Shelburne Spinners

From the hills of Vermont, beautiful, consistent, glowing, rugged, heavy 2-ply handspun yarns in a rainbow of natural-dyed colors for knitting, crocheting, weaving and stitchery. Commercial yarns are garish by comparison.

Both the people and the product are unique. The Shelburne Spinners are a non-profit, tax-exempt co-operative and school for professional handspinners that organized and got some state and federal funding as part of a revival of local craft industry in Vermont. With grit and ingenuity they've gotten professional consultation on streamlining their wool preparation processes which they do collectively, then spin at home on specially weighted Finnish saxony wheels. The operation's pretty efficient but not yet self-supporting. No way is it easy work, but there's a lot of joy in it — that certain soft, clear yellow-gold means something when you've raised the marigolds or spent hours in the sun picking goldenrod — takes a mountain of flowers to dye a 3-lb. dyelot of wool.

Yarns are sold by the skein and in kits with instructions and label for the finished product. They also put out a homey and informative newsletter sharing tidbits of technical info they've researched, designs, notices of sales, etc.



Yarn Samples
$2.00 postpaid
from:
The Shelburne Spinners
Box 651
Burlington, VT 05401

Putting on the Dog

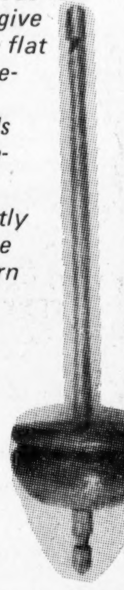
Fluffy doghair everywhere? Why not spin it? Fun little book tells you how to make your own drop spindle and start in. (Wheel-spinning section falls far short of Bette Hochberg's, but then hers is a bit sparse on doghair per se.) So — for $2.50 with a doghair yarn sample page included, you can't go wrong.

Putting on the Dog
Carol Kroll
1976; 29 pp.
$2.50 postpaid

from:
Carol Kroll
P.O. Box 266
Jefferson, WI 53549

Amos Handspindles

Alden Amos makes very efficient handspindles as well as wheels. The notched, slotted head at the top of the shaft allows the yarn to feed off from dead center giving a prolonged continuous spin. The bottom of the shaft is slim enough to stay put if you spin sitting and unwind the yarn holding the spindle upright on your thigh, and is notched for resting on a jeans watch pocket if you wind off standing up holding the spindle horizontally.



The beanpot spindles are made of exotic hardwoods for density and weight; the extra weight and design give a very fast spin for fine, hard-twisted yarns. The flat whorl spindles come in two weights — light to medium, and medium to heavy for spinning more conventional yarns, and are of various hardwoods with birch shafts. All have shaft and whorl lathe-turned as a unit for perfect balance.

These spindles rotate without a wobble if correctly used: wind yarn 3-4 turns up the shaft, under the notch and pull up thru the slot. Do not loop yarn under the whorl.

Beanpot Spindle
$10.00 plus postage

from:
Straw Into Gold
P.O. Box 2904
Oakland, CA 94618

Flat-whorl spindle, light to medium
$6.50 plus postage

medium to heavy
$7.50 plus postage

Spinning Wheel Plans

(Continued from Fall '76 ***CQ****, p. 99)*

Here's another source for plans. We have the drawings for the Welsh, Swede and English wheels; they look OK to good — very British and stuffy plans.

Quailcraft Products
Five Poplars,
Pankridge Street
Crondall, Farnham,
Surrey, England

—Alden Amos

The Web

For journal addicts, the New Zealand spinner's and weaver's quarterly journal is:

The Web
$4.65 /year

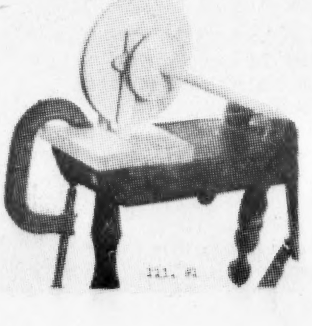
from:
The Web
P.O. Box 225
Balclutha, Otago
New Zealand

Spindle Head

Your imagination's the limit on bulk and novelty yarns with this attachment for Saxony wheels. Clamps on the wheel bed with a "C" clamp, allows you to make any size or texture yarn on your own wheel since you're no longer bound by size of orifice or hooks. You have both hands free to draw out and wind on as you treadle. It's also possible to convert it for a Nagy Castle wheel (EPILOG, p. 569) by drilling slots in the spindle head base identical to those on the base of the Nagy mother-of-all. Just bolt it on in place of the mother-of-all.

Very simple, versatile gadget. Instructions included for mounting and spinning with it. Available in 4 different sizes.

Spindle Head
$14.50 postpaid
from:
Handcraft Wools Ltd.
Box 378
Streetsville
Ontario, Canada
L5M 2B9



Community

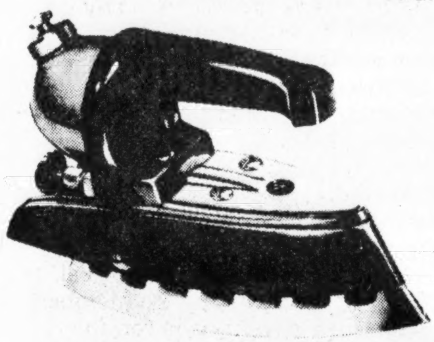
The Good Neighbor Heritage Catalog

These people stock many old timey tools, such things as Coleman irons (for those of you not into wash and wear) and a host of other equipment appropriate (there's that word again) to the Amish manner of living. Some of you might be interested in the kerosene refrigerators which are doubtless adaptable to other heat sources.

—J. Baldwin

The Good Neighbor Heritage Catalog
$1.00 postpaid

from:
Lehman Hardware &
Appliances, Inc.
Box 41
Kidron, OH 44636



Kerosene (Paraffin)
Coleman

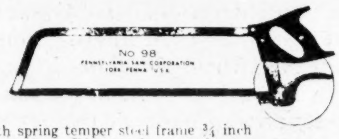
Preheats Quickly
With Alcohol
(Meth. Spirits)

Light Weight
Aluminum Sole
Plate

$30.94

- **Uniform heat distribution through sole plate**
- **Perfectly balanced**
- **Modern design**
- **Cool, comfortable handle**
- **Tapered ironing edge**
- **Iron in comfort; no muscular fatigue.**
- **No wires or connections can be used anywhere**
- **Sturdy, long-life generator**
- **Built-in pump**
- **Large opening for refilling or fuel tank**
- **Generator and tank assembly easily removed for service**
- **Burns for approximately 2 hours on one tank of fuel**

BUTCHER SAWS
PENN



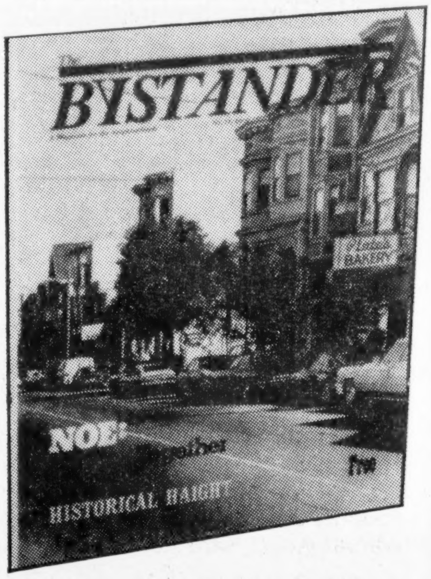
Sturdy construction with spring temper steel frame ¾ inch wide, ¼ inch thick, square edge. Distance from tooth edge of blade to inside of back at center is 4½ inches. Quick action tightening lever for drawing blade up into taut position. Spring steel blade ¾ inch wide. Steel pins permanently fastened in both ends of blade make quick change of blades possible without use of any tools. Natural varnish finish hardwood handle with nickel plated screws. Frames supplied complete with one blade.

Length blade, 22 in	BS22	$ 9.44
Length blade, 24 in	BS24	$10.06

The Bystander

Neighborhood magazines. Why the hell not? You can build community feeling, be in the gossip, do well with ads, and do good around town. Here's a nice example serving the San Francisco neighborhoods of Haight-Ashbury, Inner Sunset, Noe Valley, and Eureka Valley. Start your own.

—SB



The Bystander
$6.50 /year

from:
The Bystander
1770 Haight St.
San Francisco
CA 94117

"Reward: Shortly after 2:00 a.m. March 18 on 24th between Noe and Castro, Stephen Sillik was hit and run. As this is being written, Stephen lies comatose in critical condition. A reward (collected from concerned residents of Noe Valley) is offered for information leading to the arrest and conviction of the driver of the vehicle that hit and run Stephen Sillik."

If you live in Noe Valley you've probably read these words before. It's the opening paragraph of a flyer that dots storefront windows up and down 24th Street.

●

EAST OF THE SUN. Remember all of the wonderful treasures you collected as a kid. You found them in dime stores, cereal boxes, and bubble gum machines. You saved, hoarded, and traded. If you're still looking for these treasures (or if your kids are) go to East of the Sun.

Eileen, the owner, has the most marvelous collection of kitsch in town. The day we were in, the shop was overrun by kids and adults alike. All asking questions, buying, browsing. Yet Eileen managed to be cheerful with all of the customers and carry on a most enjoyable conversation with us. Stop into one of the few shops in town that hasn't been overrun by inflation. Some treasures are still affordable.

American Indian Reference Book

If you have anything even semi-professional to do with Indians, you will use this surprising compendium.

—SB

American Indian Reference Book
eARTH
1976; 307 pp.
$9.95 postpaid

from
eARTH
P.O. Box 2275
Alexandria, VA 22301
or Whole Earth

Early August

Lake Andes, So. Dakota	Powwow
Fond du Lac, Minn.	Chippewa Fair
Fort Yates, No. Dakota	Powwow
Talihina, Oklahoma	Choctaw Fair
Lower Brule, So. Dakota	Indian Fair & Powwow
Rosebud, So. Dakota	Spotted Tail Powwow
Kalispel Reservation, Wash.	Powwow
Ashland, Montana	Powwow
Harlem, Montana	Powwow
Usk, Washington	Kalispel Powwow
Tuscarora Reservation, N.Y.	Community Fair

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How To Start and Operate a Mail-Order Business

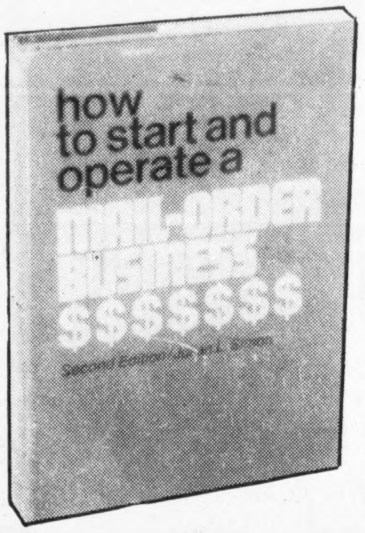
A good book for a general survey of starting a mail-order business. But like most starting-a-business books it doesn't deal with the most difficult and important factor: Starting your own business requires the commitment of your life.

—*Mike Young*

How to Start and Operate
A Mail-Order Business
(Second Edition)
Julian L. Simon & Assoc.
1965, 1976; 443 pp.
$14.50 postpaid

from:
McGraw-Hill Book Co.
Princeton Road
Hightstown, NJ 08520
or Whole Earth

Direct-mail experts disagree on many points, but on this they are unanimous: *The best list is the list of your old customers.* It will pull 2 to 10 times better than any list you can find. The people on your list know you and patronize you as they would patronize an old friend.



Mail-order selling is the *most* scientific business in the world. By that I mean that *figuring* and *calculating* can control a firm's decisions more than in any other line of trade. Aside from the selection of the offer and the creation of copy, the "human factor" and other imponderables have a smaller effect in mail order than in any other business, no matter how large the business is.

For example, the split-run test (more about that later) is the most perfect experiment ever devised in the social sciences. Its accuracy and validity are fantastically greater than any psychologist, sociologist or economist ever hopes to achieve in his work. . . .

The Price of Marijuana Misinformation

by RUSSEL FALCK

Congratulations to CQ for printing a superb piece of humor in your Spring 1977 issue, **Marijuana as a Contraceptive** by Kay Weiss. I am sure it must be humor because if it was supposed to be a serious article it was, at best, uninformed and, at worst, very dangerous.

Firstly, it seems that Ms. Weiss would have a lot of trouble distinguishing an apple from a banana if her comments on the similarity between marijuana and estrogen are any indication of her ability to discriminate. Marijuana and estrogen are not the same chemicals although Ms. Weiss seems to think they may be. While there may be some molecular similarities between marijuana and estrogen, there are also similarities between carbon monoxide and carbon dioxide, yet anyone with a brain in their head could tell you that these similar gases have significantly different impacts on the human physiology. Ms. Weiss's shaky extrapolative assumptions are certainly not warranted.

Secondly, Ms. Weiss sees fit to cite a research finding that says marijuana lowers testosterone levels, but fails to mention that other researchers have not been able to replicate this finding, (Mendelson et al, 1974. The Mendelson study was also published in a November 1974 issue of the **New England Journal of Medicine.**)

Thirdly, Ms. Weiss tells CQ readers that marijuana causes birth defects in laboratory animals. The implication of her statement is that marijuana causes birth defects in humans. I know of no studies involving human subjects which have reached this conclusion, though a number have tried. The extrapolation of animal studies to human beings is of dubious validity. I am sure that Ms. Weiss knows that Thalidomide proved safe in tests with lab animals, yet Thalidomide wreaked devastation on human beings.

Fourthly, Ms. Weiss takes great pains to cite scientific data to prove how harmful marijuana is. Unfortunately, Ms. Weiss accepts the data presented in her article as fact when, in fact, none of the studies she has cited in her article have been replicated. For data to be accepted as fact other researchers have to be able to replicate the findings at least a couple of times. Fortunately, for marijuana users, the data Weiss cites has not been replicated, but it continues to linger as proven fact with the help of uninformed writers like Weiss.

Fifthly, and it is this point that makes me think Ms. Weiss's article was meant to be humorous, she decries drug research because of the drug companies inability to differentiate women from guinea pigs and then goes on to call for research findings that relate to human beings. Then, on the other hand, throughout her article she cites unreplicated human studies or animal research extrapolated to human beings to "prove" how harmful marijuana use is. The illogic of Ms. Weiss is self-evident.

Ms. Weiss seems to be ignorant of studies on the long-term effects of marijuana use on real, live human beings. One of the most thorough studies is the Jamaican study, conducted by the Research Institute for the Study of Man, which found no significant differences between a non-smoking control group and heavy smoking experimental group. The RISM study employed extensive and sophisticated psychological and physiological tests. It is interesting to note the members of the experimental group had smoked marijuana for an average of 17.5 years and were also the progeny of marijuana smokers. Indeed if marijuana were teratogenic, mutagenic, or significantly carcinogenic, it would have surfaced in this study since the researchers were looking for these kinds of things. Indeed, similar studies of populations in Greece and Costa Rica have yielded similar results.

I agree with Ms. Weiss that it is not good to smoke dope during pregnancy just as it is not wise to take any drugs during pregnancy, but the best evidence to date indicates that marijuana does not pose a particularly significant threat to the fetus and its development.

Ms. Weiss seems to think we should be impressed with her scientific references. Admittedly **Science** and **The New England Journal of Medicine** are prestigious scientific publications. One should note, however, that **Science** published the now infamous Nahas study on immune response and marijuana use and **The New England Journal of Medicine** published accounts of LSD and broken chromosomes when, in fact, it now seems that LSD is a most trivial factor in birth defects. In fact, it was an underground newspaper, the **Berkeley Barb**, that first pointed out the flawed nature of the LSD research — not a prestigious scientific journal. In **The Natural Mind**, Andrew Weil addresses the area of drug research. It would be a good idea if Ms. Weiss would read it.

Finally, I have responded to Ms. Weiss's article because I have had to deal with the consequences of piss-poor, irresponsible journalistic endeavors like the one published in the Spring issue. I have worked in drug education, information, and treatment programs for a number of years and have received calls from men and women who were afraid to have children or who were seriously considering having an abortion because they had heard or read about marijuana, LSD, or mescaline causing birth defects. To date, there has not been a single scientific study conducted with human beings which has indicated that these drugs are the dreaded malformers that people like Weiss make them out to be. The point of all this is that the results of possible well-intentioned efforts like Weiss's can be devastating and deadly. ■

SUGGESTED READING

Weil, Andrew, *The Natural Mind*, Houghton-Mifflin; Boston, 1972.
Brecher, Edward, *Licit and Illicit Drugs*, Little-Brown; Boston, 1972.
Brecher, Edward, "*Marijuana: The Health Questions,*" *Consumer Reports*: March, 1975.
Mikuriya, Tod, *Marijuana: The Medical Papers*, Medi-Comp Press: Oakland, 1976.

DEATH DOES NOT EXIST

BY DR. ELISABETH KÜBLER-ROSS

Illustrations by Neil Watson

I was thinking for a long time what I'm going to talk with you about, this morning. I'm going to share with you how a two-pound "nothing" found her way, her path in life. How I learned what I'm going to share with you, and how you too can be convinced that this life here, this time that you're in a physical body, is a very, very short span of your total existence. It's a very important time of your existence because you're here for a very special purpose, which is yours and yours alone. If you live well, you will never have to worry about dying. You can do that even if you have only one day to live. The question of time is not terribly important, it is a man-made, artificial concept anyway.

To live well means basically to learn to love. I was very touched yesterday when the speaker mentioned, "Faith, love and hope, but the biggest of the three is love." In Switzerland you have confirmation when you're 16, and you get a saying that is supposed to be a leading word throughout life. Since we were triplets, they had to find the one for three of us, and they picked love, faith, and hope, and I happened to be love.

I'm going to talk with you about love today. Which is life, and death; it is all the same thing.

I mentioned briefly that I was born an "unwanted" child. Not that my parents didn't want a child. They wanted a girl very badly, but a pretty, beautiful, ten-

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We first learned about this talk of Dr. Ross's by reading about it in Marilyn Ferguson's excellent newsletter **Brain/Mind Bulletin** *($15/yr., Box 42211, Los Angeles, CA 90042). The occasion was a Labor Day weekend conference on "The Healing Center of the Future," held at the University of California, San Diego, sponsored by the Medical School and the Association for Holistic Health.*

Editor Ferguson reported, "Charisma is too weak a term for the tangible electricity that settled over the auditorium from the moment Kübler-Ross began. Most of the audience of 2300 appeared to be moved to tears. At the conclusion there was an immobilized silence for several moments – then, as if a single entity, the audience rose in ovation."

Dr. Ross told of two remarkable encounters with long-deceased former patients. One appears here. The only tape recording made of the talk left out the second experience, which had occurred the night before Dr. Ross spoke. Both that experience (which she tape-recorded) and a photograph of the note written by Mrs. S. which is reported here will appear in a forthcoming book by Kübler-Ross.

Her previous books are: **On Death and Dying**, *which has done for this subject what Rachel Carson's* **Silent Spring** *did for environmentalism (***On Death and Dying**, *1969, is $2.25 from Macmillan),* **Questions and Answers on Death and Dying** *(1974, $1.50 from Macmillan), and* **Death – The Final Stage of Growth** *(1975, $7.95 from Prentice-Hall, an anthology of various writers).*

–SB

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pound girl. They did not expect triplets, and when I came, I was only two pounds and very ugly, and no hair, and was a terrible, terrible big disappointment. Then 15 minutes later the second child came, and after 20 minutes a 6-1/2 pound baby came, and they were very happy. But they would have liked to give two of them back.

I think that nothing in life is a coincidence. Not even that, because I had the feeling that I had to prove all my life that even a two-pound nothing . . . that I had to work really hard, like some blind people think that they have to work ten times as hard to keep a job. I had to prove very hard that I was worth living.

When I was a teenager and the war was over, I needed and wanted to do something for this world which was in a terrible mess at the end of the war. I had promised to myself that if the war ever ended that I would go and walk all the way to Poland and Russia and start first aid stations and help stations. I kept my promise, and this is, I think, where this whole work on death and dying started.

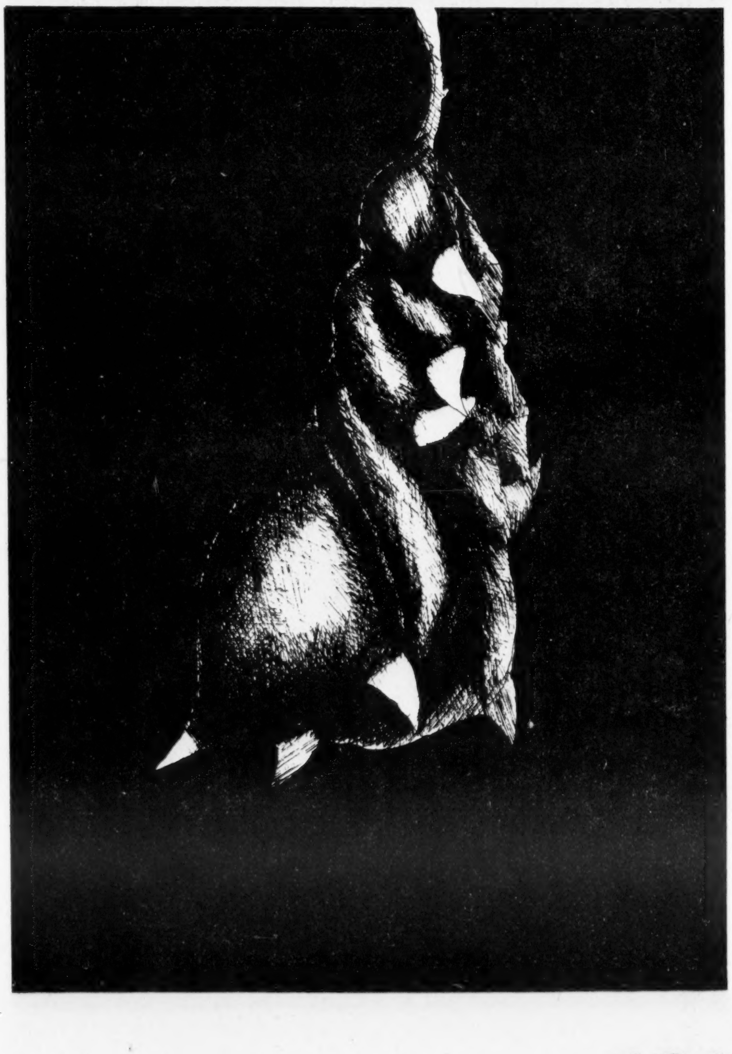
I personally saw the concentration camps. I personally saw train loads of baby shoes, train loads of human hair from the victims of the concentration camps taken to Germany to make pillows. When you smell the concentration camps with your own nose, when you see the crematoriums, when you're very young like I was, when you are really an adolescent in a way, you will never ever be the same any more, after that. Because what you see is the inhumanity of man and that each one of us in this room is capable of becoming a Nazi monster. That part of you you have to acknowledge. But each one of you in this room also has the ability of becoming a Mother Teresa, if you know who she is. She's one of my saints – a woman in India who picks up dying children, starving, dying people, and believes very strongly that even if they're dying in her arms, that if she has been able to love them for five minutes, that this is worthwhile, that they have lived. She is a very beautiful human being, if you ever have a chance of seeing her.

When I came to this country, after having been a country doctor in Switzerland, and a very happy one, I had prepared my life to go to India to be a physician in India like Schweitzer was in Africa. But two weeks before I was supposed to leave I was notified that the whole project in India had fallen through. And instead of the jungles of India I ended up in the jungles of New York, marrying an American, who took me to the one place in the world which was at the bottom of my list of where I ever wanted to live. And that too was not coincidence, because to go to a place that you love is easy, but to go to a place where you hate every bit of it, that is a test. That is given to you to see if you really mean it.

I ended up at Manhattan State Hospital, which is another dreadful place. Not knowing really any psychiatry, and being very lonely and miserable and unhappy, and not wanting to make my new husband unhappy, I opened up to the patients. I identified with their misery and their loneliness and their desperation and suddenly my patients started to talk. People who didn't talk for twenty years. They started to verbalize, share their feelings, and I suddenly knew that I was not alone in my misery, though it wasn't half as miserable as living in a state hospital. For two years I did nothing else but live and work with these patients, sharing every Hanukkah, Christmas, Passover, and Easter with them, just to share their loneliness, not knowing much psychiatry, the theoretic psychiatry that one ought to know. I barely understood their English, but we loved each other. We really cared. After two years 94 percent of those patients were discharged, self-supporting, into New York City, many of them having their own jobs and able to function.

What I'm trying to say to you is that knowledge helps, but knowledge alone is not going to help anybody. If you do not use your head and your heart and your soul, you're not going to help a single human being. This is what so-called hopeless, schizophrenic patients taught me. In all my work with patients, whether they were chronic schizophrenics, or severely retarded children, or dying patients, each one has a purpose. Each one can not only learn and be helped by you, but can actually become your teacher. That is true of 6-month old retarded babies who can't speak. That is true of hopeless schizophrenic patients, who behave like animals when you see them for the first time. But the best teachers in the world are dying patients.

Dying patients, when you take the time out and sit with them, they teach you about the stages of dying. They teach you how they go through the denial and the anger, and the "Why me?", and question God and reject Him for a while. They bargain with Him, and then go through horrible depressions, and if they have another human being who cares, they may be



able to reach a stage of acceptance. But that is not just typical of dying, really has nothing to do with dying. We only call it the "stages of dying" for lack of a better word. If you lose a boyfriend or a girlfriend, or if you lose your job, or if you are moved from your home where you have lived for 50 years and have to go to a nursing home, some people if they lose a parakeet, some people if they only lose their contact lenses, go through the same stages of dying. This is, I think, the meaning of suffering.

All the hardships that you face in life, all the tests and tribulations, all the nightmares and all the losses, most people still view this as a curse, as a punishment by God, as something negative. If you would only know that nothing that comes to you is negative. I mean nothing. All the trials and the tribulations, and the biggest losses that you ever experience, things that make you say, "If I had known about this I would never have been able to make it through," are gifts to you. It's like somebody has to – what do you call that when you make the hot iron into a tool? – you have to temper the iron. It is an opportunity that you are given to grow. That is the sole purpose of existence on this planet Earth. You will not grow if you sit in a beautiful flower garden and somebody brings you gorgeous food on a silver platter. But you will grow if you are sick, if you are in pain, if you experience losses, and if you do not put your head in the sand, but take the pain and learn to accept it, not as a curse or a punishment, but as a gift to you with a very, very specific purpose.

I will give you a clinical example of that. In one of my one-week workshops – they are one-week live-in retreats – was a young woman. She did not have to face the death of a child, but she faced several what we call "little deaths." Not very little in her eyes. When she gave birth to a second baby girl which she was very much looking forward to, she was told in a not very human way that the child was severely retarded, in fact that the child would never be able to even recognize her as her mother. When she became aware of this her husband walked out on her, and she was suddenly faced with two young, very needy, very dependent children, no money, no income, and no help.

She went through a terrible denial. She couldn't even use the word retardation. She then went through fantastic anger at God, cursed him out, first he didn't exist at all, and then he was a mean old you know what. Then she went through tremendous bargaining – if the child at least would be educatable, or at least could recognize her as a mother. Then she found some genuine meaning in having this child, and I'll simply share with you how she finally resolved it. It began to dawn on her that nothing in life is coincidence. She tried to look at this child and tried to figure out what purpose a little vegetable-like human being has in this Earth. She found the solution, and I'm sharing this with you in the form of a poem that she wrote. She's not a poetess, but it's a very moving poem. She identifies with her child and talks to her godmother. And she called the poem "To My Godmother."

What is a godmother?
I know you're very special,
You waited many months for my arrival.
You were there and saw me when
only minutes old,
and changed my diapers when I had been there
just a few days.
You had dreams of your first godchild.
She would be precocious like your sister,
You'd see her off to school, college,
and marriage.
How would I turn out? A credit to those
who have me?
God had other plans for me. I'm just me.
No one ever used the word precocious about me.
Something hasn't hooked up right in my mind.
I'll be a child of God for all time.
I'm happy. I love everyone, and they love me.
There aren't many words I can say,
But I can communicate and understand affection,
warmth, softness and love.
There are special people in my life.
Sometimes I sit and smile and sometimes cry,
I wonder why?
I am happy and loved by special friends.
What more could I ask for?
Oh sure, I'll never go to college, or marry.
But don't be sad. God made me very special.
I cannot hurt. Only love.
And maybe God needs some children who
simply love.
Do you remember when I was baptized,
You held me, hoping I wouldn't cry and
you wouldn't drop me?
Neither happened and it was a very happy day.

Is that why you are my godmother?
I know you are soft and warm, give me loves,
but there is something very special in your eyes.
I see that look and feel that love from others.
I must be special to have so many mothers.
No, I will never be a success in the eyes of
the world,
But I promise you something very few people can.
Since all I know is love, goodness and innocence,
Eternity will be ours to share, my godmother.

This is the same mother who, a few months before, was willing to let this toddler crawl out near the swimming pool and pretend to go to the kitchen so the child would fall into the swimming pool and drown. I hope that you appreciate the change that has taken place in this mother.

This is what takes place in all of you if you are willing to always look at anything that happens in your life from both sides of the coin. There is never just one side to it. You may be terminally ill, you may have a lot of pain, you may not find somebody to talk to about them. You may feel that it's unfair to take you away in the middle of your life, that you haven't really started to live yet. Look at the other side of the coin.

You're suddenly one of the few fortunate people who can throw overboard all the "baloney" that you've carried with you. You can go to somebody and say, "I love you," when they can still hear it, and then they can skip the schmaltzy eulogies afterwards. Because you know that you are here for a very short time, you can finally do the things that you really want to do. How many of you in this room, how many of you do not truly do the kind of work that you really want to do from the bottom of your heart? You should go home and change your work. Do you know what I'm saying to you? Nobody should do something because somebody tells them they ought to do that. This is like forcing a child to learn a profession that is not its own. If you listen to your own inner voice, to your own inner wisdom, which is far greater than anybody else's as far as you're concerned, you will not go wrong and you will know what to do with your life. And then time is no longer relevant.

After working with dying patients for many years and learning from them what life is all about, what regrets people have at the end of their life when it seems to be too late, I began to wonder what death is all about. Nobody ever defines death except in physical language – first it was no heart beat, no blood pressure, no vital signs; then it became more sophisticated and added EEG and became a several page description. But that too is not sufficient, because it only deals with the physical body.

One of my patients helped me to find out how to begin research into finding out what death really is, and with it, naturally, the question of life after death. Mrs. S had been in and out of the intensive care unit 15 times, never was expected to live, but always made a comeback. In one of her hospitalizations she could not get to Chicago, and she was hospitalized in a local hospital. She remembers being put in a private room, very close to death, and could not make up her mind whether she should call the nurse because she suddenly sensed that she was moments away from death. One part of her wanted very much to lean back in the pillows and finally be at peace. But the other part of her needed to make it through one more time because her youngest son was not yet of age. Before she made the decision to call the nurse and go through this whole rigamarole once more, a nurse apparently walked into her room, took one look at her, and dashed out.

At that moment, she saw herself floating out of her physical body, floating a few feet above her body. She was very surprised at seeing her corpse in that bed. She made some very funny remarks about how pale she looked, and then to her utter amazement, described how the resuscitation team dashed into her room. She described in minute details how they worked on her, who was in the room first, who was in last, what they wore, what they said – she even repeated a joke of one of the residents who apparently was very apprehensive and started to joke. In the meantime while everybody worked very desperately to bring her back to physical life, she floated a few feet above her body and had only one need, one wish – to tell them down there, "Cool it, relax, take it easy, it's OK." Those are her own words. The more she tried, the more she realized that she could perceive absolutely everything that was going on, but they could not perceive her. And then she gave up on them. She was declared dead, and three and a half hours later she made a comeback and lived for another year and a half.

In my classroom this was our first account of a patient who had this experience. This then lead to a collection of cases from all over the world. We have hundreds of cases, from Australia to California. They all share the same common denominator. They are all fully aware of shedding their physical body. And death, as we understood it in scientific language, does not really exist. Death is simply a shedding of the physical body like the butterfly coming out of a cocoon. It is a transition into a higher state of consciousness, where you continue to perceive, to understand, to laugh, to be able to grow, and the only thing that you lose is something that you don't need anymore, and that is your physical body. It's like putting away your winter coat when spring comes and you know that the coat is too shabby and you don't want to wear it any more. That's virtually what death is all about.

Not one of the patients who's had this experience, was ever again afraid to die. Not one of them, in all our cases. Many of our patients also said that besides the feeling of peace and equanimity which all of them have, and the knowledge that they can perceive but not be perceived, they also have a sense of wholeness. That means that somebody who was hit by a car and had a leg amputated sees his amputated leg on the highway and then he gets out of his physical body and has both legs. One of our female patients was blinded in a laboratory explosion, and the moment she was out of her physical body she was able to see, was able to describe the whole accident and describe people who dashed into the laboratory. When she was brought back to life she was totally blind again. Do you understand why many, many of them resent our attempts to artificially bring them back when they are in a far more gorgeous, more beautiful and more perfect place?

The most impressive part, perhaps, for me, has to do with my recent work with dying children. Almost all my patients are children now. I take them home to die. I prepare the families and siblings in order to have my children die at home. The biggest fear of children is to be alone, to be lonely, not to be with someone. At that moment of this transition, you're never, ever alone. You're never alone now, but you don't know it. But at the time of transition, your guides, your guardian angels, people whom you have loved and who have passed on before you, will be there to help you in this transition. We have verified this beyond any shadow of a doubt, and I say this as a scientist. There will always be someone who helps you in this transition. It is most of the time a mother or father, a grandparent, or a child if you have lost a child. It is sometimes people that you didn't even know were "on the other side" already.

I had the most moving experience – the gift of an Indian woman who was in her nineties, who came all the way to one of my lectures in Arizona and traveled an enormous distance from her reservation to share with me this incident. I have very few incidents of Indians. They do not talk about these things, and they are my most favorite people. This woman introduced me to her daughter – the woman was about 90, the daughter about 70. They came together to my workshop. The 70-year old daughter told me that her sister was killed on the highway, hundreds of miles away from the reservation, by a hit and run driver. Another car stopped and the driver tried to help her. The dying woman told the stranger that he should make very very sure to tell her mother that she was all right because she was with her father, and she died after having shared that. The patient's father had died within one hour on the reservation, hundreds of miles away from the accident scene and certainly unbeknownst to his traveling daughter.

Do you understand what I'm trying to say?

We've had one case of a child, a 12 year old, who did not want to share with her mother that it was such a beautiful experience when she died, because no mommy likes to hear that their children found a place that's nicer than home, and that's very understandable. But she had such a unique experience that she needed desperately to share it with somebody, and so one day she confided in her father. She told her father that it was such a beautiful experience when she died that she did not want to come back. What made it very special, besides the whole atmosphere and the fantastic love and light that most of them convey, was that her brother was there with her, and held her with great tenderness, love and compassion. After sharing this she said to her father, "The only problem is that I don't have a brother." Then the father started to cry, and confessed that she indeed did have a brother who died, I think three months before she was born and they never told her.

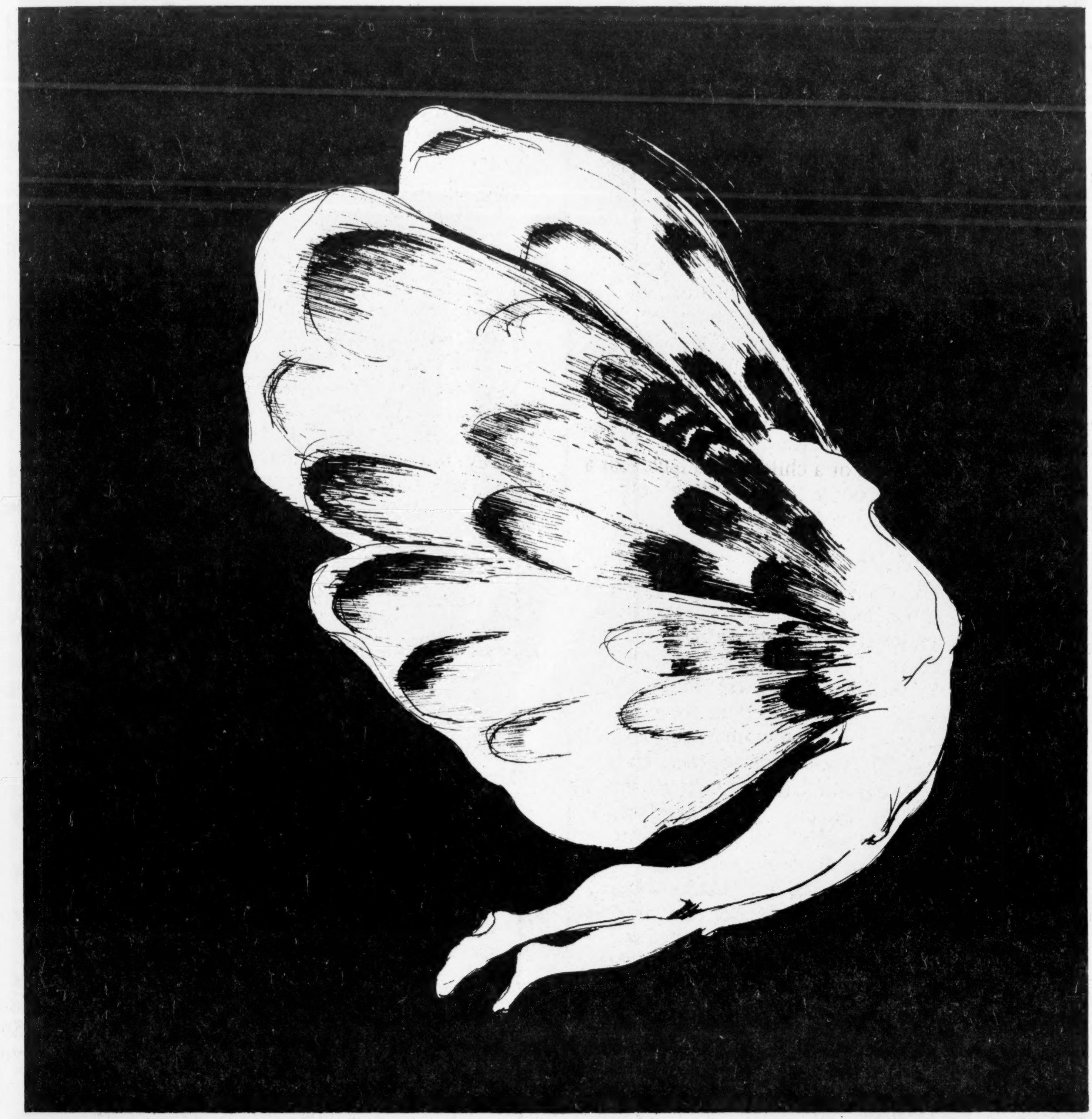
Do you understand why I am bringing up examples like this? Because many people say, well, you know, they were not dead, and at the moment of their dying they naturally think of their loved ones, and so they naturally visualize them. Nobody could visualize that.

I ask all my terminally ill children whom they would love to see the most, whom they would love to have by their side always, (meaning here and now, because many of them are nonbelieving people, and I could not talk about life after death. I do not impose that onto my patients). So I always ask my children whom would you like to have with you always, if you could choose one person? Ninety-nine percent of the children, except for Black children, say mommy and daddy. (With Black children, it is very often Aunties or Grandmas, because Aunty or Grandma are the ones who love them perhaps the most, or have the most time with them. But those are only cultural differences.) Most of the children say mommy and daddy, but not one of these children who nearly died has ever seen mommy and daddy, unless their parents had preceded them in death.

Many people say, well this is a projection of wishful thinking. Somebody who dies is desperate, lonely, frightened, so they imagine somebody with them whom they love. If this were true, 99 percent of all my dying children, my 5, 6, 7-year olds, would see their mommies and their daddies. But not one of these children, in all these years that we've collected cases, when they died saw their mommies and daddies, because their mommies and daddies were still alive. The common denominator of who you are going to see is that they must have passed on before you even if it's only one minute, and that you have genuinely loved them. That means many of my children see Jesus. A Jewish boy would not see Jesus, because a Jewish boy normally doesn't love Jesus. These are only religious differences. The common denominator is simply genuine love.

I have not finished telling you the story of Mrs. S and I'm going to run out of time, I'm sure. I want to add that she died two weeks after her son was of age. She was buried, and she was one of many patients of mine, and I'm sure I would have forgotten her if she had not visited me again.

Approximately ten months after she was dead and buried, I was in troubles. I'm always in troubles, but at that time I was in bigger troubles. My seminar on Death and Dying had started to deteriorate. The minister with whom I had worked and whom I loved very dearly had left. The new minister was very conscious of publicity, and it became an accredited course. Every week we had to talk about the same stuff, and it was like the famous date show. It wasn't worth it. It was like prolonging life when it's no longer worth living. It was something that was not me, and I decided that the only way that I could stop it was to physically leave the University of Chicago. Naturally my heart broke, because I really loved this work, but not that way. So I made the heroic decision that "I'm going to leave the University of Chicago, and today immediately after my Death and Dying seminar I'm going to give notice." The minister and I had a ritual. After the seminar we would go to the elevator, I would wait for his elevator to come, we

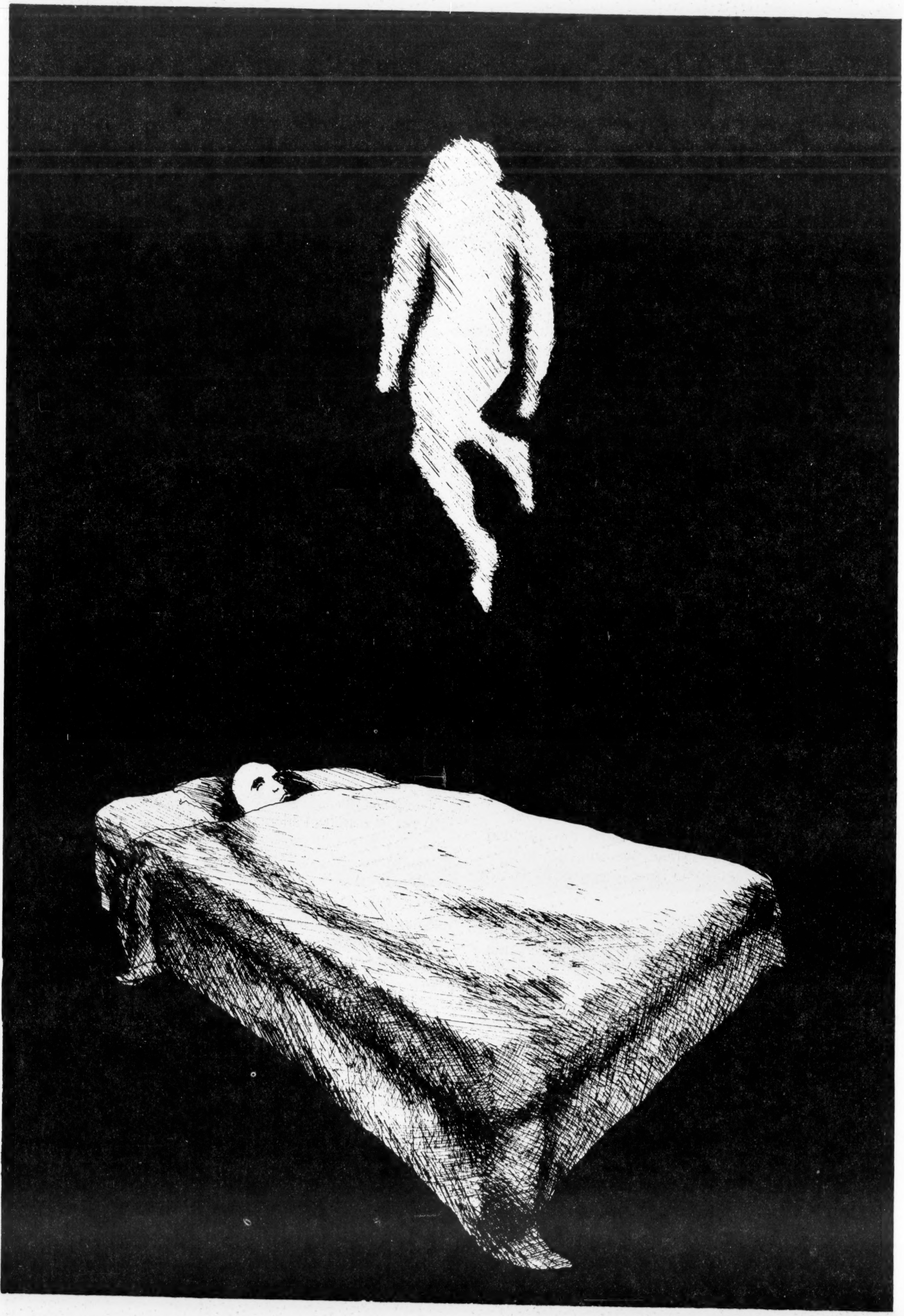


would finish business talk, he would leave, and I would go back to my office, which was on the same floor at the end of a long hallway.

The minister's biggest problem was that he couldn't hear; that was just another of my grievances. And so, between the classroom and the elevator, I tried three times to tell him that it's all his, that I'm leaving. He didn't hear me. He kept talking about something else. I got very desperate, and when I'm desperate I become very active. Before the elevator arrived – he was a huge guy – I finally grabbed his collar, and I said, "You are gonna stay right here. I have made a horribly important decision, and I want you to know what it is." I really felt like a hero to be able to do that. He didn't say anything. At this moment a woman appeared in front of the elevator.

I stared at this woman. I cannot tell you how this woman looked, but you can imagine what it's like when you see somebody that you know terribly well, but you suddenly block out who it is. I said to him, "God, who is this? I know this woman, and she's staring at me; she's just waiting until you go into the elevator, and then she'll come." I was so preoccupied with who she was I forgot that I tried to grab him. She stopped that. She was very transparent, but not transparent enough that you could see very much behind her. I asked him once more, and he didn't tell me who it was, and I gave up on him. The last thing I said to him was kind of, "To heck, I'm going over and tell her I just cannot remember her name." That was my last thought before he left.

The moment he entered the elevator, this woman walked straight towards me and said, "Dr. Ross, I had to come back. Do you mind if I walk you to your office? It will only take two minutes." Something like this. And because she knew where my office was, and she knew my name, I was kind of



safe, I didn't have to admit that I didn't know who she was. This was my longest path I ever had in my whole life. I am a psychiatrist. I work with schizophrenic patients all the time, and I love them. When they had visual hallucinations I told them a thousand times, "I know you see that Madonna on the wall, but I don't see it." I said to myself, "Elisabeth, I know you see this woman, but that can't be."

Do you understand what I'm doing? All the way from the elevator to my office I did reality testing on me. I said, "I'm tired, I need a vacation. I think I've seen too many schizophrenic patients. I'm beginning to see things. I have to touch her, if she's real." I even touched her skin to see if it was cold or warm, or if the skin would disappear when I touched it. It was the most incredible walk I have ever taken, but not knowing all the way why I am doing what I am doing. I was both an observing psychiatrist and a patient. I was everything at one time. I didn't know why I did what I did, or who I thought she was. I even repressed the thought that this could actually be Mrs. S who had died and was buried months ago.

When we reached my door, she opened the door like I'm a guest in my own house. She opened the door with this incredible kindness and tenderness and love and she said, "Dr. Ross, I had to come back for two reasons. One is to thank you and Reverend Gaines . . ." (he was that beautiful Black minister with whom I had this super ideal symbiosis.) "To thank you and him for what you did for me. But the real reason why I had to come back is that you cannot stop this work on death and dying, not yet."

I looked at her, and I don't know if I thought by then, "It could be Mrs. S." I mean, this woman was buried for ten months and I didn't believe in all that stuff. I finally got to my desk. I touched everything that was real. I touched my pen, my desk, and my chair, and it's real, you know, hoping that she would disappear. But she didn't disappear, she just stood there and stubbornly but lovingly said, "Dr. Ross, do you hear me? Your work is not finished. We will help you, and you will know when the time is right, but do not stop now, promise."

I thought, "My God, nobody would ever believe me if I told about this, even to my dearest friend." Little did I know I would say this to several hundred people. Then the scientist in me won, and I said to her something very shrewd, and a real big fat lie, I said to her, "You know Reverend Gaines is in Urbana now." (This was true; he had taken over a church there.) I said, "He would just love to have a note from you. Would you mind?" And I gave her a piece of paper and a pencil. You understand, I had no intention of sending this note to my friend, but I needed scientific proof. I mean, somebody who's buried can't write little love letters. And this woman, with the most human, no, not human, most loving smile, knowing every thought I had – and I knew, it was thought transference if I've ever experienced it – took this paper and wrote this note, which we naturally have framed in glass and treasure dearly. Then she said, but without words, she said, "Are you satisfied now?" I looked at her and thought, I will never be able to share this with anybody, but I am going to really hold onto this. Then she got up, ready to leave, repeating: "Dr. Ross, you promise," implying not to give up this work yet. I said, "I promise." And the moment I said, "I promise," she disappeared.

We still have her note.

My time is running out. I wanted to share with you many other things. I was told a year and a half ago that my work with dying patients is finished – there are many people that can carry on now – that this was not my real job, why I'm on the Earth. The whole whole work with death and dying was simply a testing ground for me, to see if I can take hardship, abuse, and resistance and whatnot. And I passed that. The second test was to see if I can take fame. And that didn't affect me, so I passed that too.

But the real job is, and that's why I need your help, to tell people that death does not exist. It is very important that mankind knows that, because we are at the beginning of a very difficult time. Not only for this country, for the whole planet Earth. Because of our own destructiveness. Because of the nuclear weapons. Because of our greediness and materialism. Because we are piggish in terms of ecology, because we have destroyed so many, many natural resources, and because we have lost all genuine spirituality. I'm exaggerating, but not too much. The only thing that will bring about the change into a new age is that the Earth is shaken, that we are shaken, and we're going to be shaken. We have already seen the beginning of it.

You have to know not to be afraid of that. Only if you keep a very, very open channel, an open mind, and no fear, will great insight and revelations come to you. They can happen to all of you in this room. You do not have to take a guru, you do not have to go to India, you don't even have to take a TM course. You don't have to do anything except learn to get in touch in silence within yourself, which doesn't cost one penny. Get in touch with your own inner self, and learn not to be afraid. And one way to not be afraid is to know that death does not exist, that everything in this life has a positive purpose. Get rid of all your negativity and begin to view life as a challenge, a testing ground of your own inner resources and strength.

There is no coincidence. God is not a punitive nasty God. After you make the transition, then you come to what was described as hell and heaven. That is not a right interpretation of the judgement, however.

What we hear from our friends who passed over, from people who came back to share with us, is that every human being, after this transition (which is peace and equanimity and wholeness and a loving someone who helps you in the transition), each one of you is going to have to face something that looks very much like a television screen, where you are given an opportunity – not to be judged by a judgmental God – but to judge yourself. By having to review every single action, every word and every thought of your life. You make your own hell, or your own heaven, by the way you live. ■

Two by Rabindranath Tagore

What I got,
And what I did not,
Today my mind refuses to draw a balance sheet.
In the light and shadow of my heart
The flute is playing a glad music.

I loved this earth, I loved it;
That memory alone comes back to my mind
Over and over again,
How the southern breeze of many springs
Filled my vessel to its brim.

My tears lie hidden in the deep chambers of the heart
Silently and in secret their pathos makes fruitful my spiritual quest.
True, the string broke now and then,
But who is going to cry over it,
Still the melody did play true, time and again.
That alone comes back to mind.

Today my mind refuses to strike a balance sheet
Of what I got,
And what I did not.

◆

You have made me endless,
Such is your sport.
Emptying this little vessel
You have filled it over and over again
With fresh draughts.

Over so many hills and dales
Along so many springs and rivers
You have carried this little reed,
Playing tune after tune over it,
Whom can I tell?

At your immortal touch
My little heart loses all limits
In overflowing delight,
And words well up from the depths.

Day and night you are giving me
A handful of your gifts.
It never ends,
The road continues for ages,
And I am forever yours. ■

Translated by Sashindra Kumar Majumdar

Three by Anne Herbert

Jesus died. God said If you want in three days I'll make you be alive again. Jesus said Sure but why me. God said Nothing special I offer this to everyone who dies. Jesus said Just a minute. God said It's too late to back out now.

* * *

People don't behave well in church on Easter. Half of them haven't been there in a year and sitting still for an hour is not easy. TV has commercials and driving has stop lights. Standing up for hymns is not enough. In my church you can't even say amen. People cough and shift and sound like they're getting ready to leave through the whole service. I know how to settle them down. Tell them to pretend they're on the bus going to work. Ignoring everyonething around them, staring straight ahead, not moving at all til half a block before their stop. All those blank minds – really, the bus is the place to give them the message. "Death isn't required, folks!" But the people on the bus wouldn't hear it. They've already rolled the stone back in front of their eyes and told the angel to go home. That's why really all the respectable non-believers are restless on Easter, listening to all these embarassing outdated things. What if it were true? Five thousand bus rides to a good job are going to look pretty silly if it turns out that life is about being alive.

* * *

So here's Peter standing by this imitation I'm sure not even cultured pearl picket gate stuck with a young sign scrawling Welcome Home to the Universe and being naturally curious and I won't add in my usual considerable pain I try to get through offering dollars, marks, amusing antidotes, purebred custom tailored yankee ingenuity with a five year service contract, stock options both ways and an all expenses paid dinner for two at a complete living room suite overlooking the latest in self-adjusting color tv but he won't take or tell me the price of admission, says I'm already in. ▪

The Death of Ivan Ilych

by LEO TOLSTOY

. . . The screaming continued for three days, and was so terrible that one could not hear it through two closed doors without horror. At the moment he answered his wife he realized that he was lost, that there was no return, that the end had come, the very end, and his doubts were still unsolved and remained doubts.

‘Oh! Oh! Oh!’ he cried in various intonations. He had begun by screaming ‘I won’t!’ and continued screaming on the letter ‘o’.

For three whole days, during which time did not exist for him, he struggled in that black sack into which he was being thrust by an invisible, resistless force. He struggled as a man condemned to death struggles in the hands of the executioner, knowing that he cannot save himself. And every moment he felt that despite all his efforts he was drawing nearer and nearer to what terrified him. He felt that his agony was due to his being thrust into that black hole and still more to his not being able to get right into it. He was hindered from getting into it by his conviction that his life had been a good one. That very justification of his life held him fast and prevented his moving forward, and it caused him most torment of all.

Suddenly some force struck him in the chest and side, making it still harder to breathe, and he fell through the hole and there at the bottom was a light. What had happened to him was like the sensation one sometimes experiences in a railway carriage when one thinks one is going backwards while one is really going forwards and suddenly becomes aware of the real direction.

‘Yes, it was all not the right thing,’ he said to himself, ‘but that’s no matter. It can be done. But what *is* the right thing?’ he asked himself, and suddenly grew quiet.

This occurred at the end of the third day, two hours before his death. Just then his schoolboy son had crept softly in and gone up to the bedside. The dying man was still screaming desperately and waving his arms. His hand fell on the boy’s head, and the boy caught it, pressed it to his lips, and began to cry.

At that very moment Ivan Ilych fell through and caught sight of the light, and it was revealed to him that though his life had not been what it should have been, this could still be rectified. He asked himself, “What *is* the right thing?’ and grew still, listening. Then he felt that someone was kissing his hand. He opened his eyes, looked at his son, and felt sorry for him. His wife came up to him and he glanced at her. She was gazing at him open-mouthed, with undried tears on her nose and cheek and a despairing look on her face. He felt sorry for her too.

‘Yes, I am making them wretched,’ he thought. ‘They are sorry, but it will be better for them when I die.’ He wished to say this but had not the strength to utter it. ‘Besides, why speak? I must act,’ he thought. With a look at his wife he indicated his son and said: ‘Take him away . . . sorry for him . . . sorry for you too. . . .’ He tried to add, ‘forgive me,’ but said ‘forego’ and waved his hand, knowing that He whose understanding mattered would understand.

And suddenly it grew clear to him that what had been oppressing him and would not leave him was all dropping away at once from two sides, from ten sides, and from all sides. He was sorry for them, he must act so as not to hurt them: release them and free himself from these sufferings. ‘How good and how simple!’ he thought. ‘And the pain?’ he asked himself. ‘What has become of it? Where are you, pain?’

He turned his attention to it.

‘Yes, here it is. Well, what of it? Let the pain be.’

‘And death . . . where is it?’

He sought his former accustomed fear of death and did not find it. ‘Where is it? What death?’ There was no fear because there was no death.

In place of death there was light.

‘So that’s what it is!’ he suddenly exclaimed aloud. ‘What joy!’

To him all this happened in a single instant, and the meaning of that instant did not change. For those present his agony continued for another two hours. Something rattled in his throat, his emaciated body twitched, then the gasping and rattle became less and less frequent.

‘It is finished!’ said someone near him.

He heard these words and repeated them in his soul.

‘Death is finished,’ he said to himself. ‘It is no more!’

He drew in a breath, stopped in the midst of a sigh, stretched out, and died. ■

Tolstoy’s Ivan Ilych was a judge, a successful bureaucrat, happy and healthy. “It could not be called ill health if Ivan Ilych sometimes said he had a queer taste in his mouth and felt some discomfort in his left side.” The discomfort became pain and in spite of his “exact fulfillment of the doctor’s instructions regarding hygiene and the taking of medicine,” the pain filled his life. This is the end of a long (60 pages) story first published in 1886. The translation is by Aylmer Maude in **The Death of Ivan Ilych and Other Stories** *(New American Library, 1960, $1.25).*

—Anne Herbert

Life After Life

Truth is qualitative but proving something requires numbers. The author has investigated the experience of over 100 people who have clinically died and then recovered. They all had a similar experience, and none had further fears of death. That may be sufficient proof for you to relax now about dying. Or you can wait for the truth.

—SB

Life After Life
(The Investigation of a Phenomenon — Survival of Bodily Death)
Raymond A. Moody, Jr.
1975; 187 pp.

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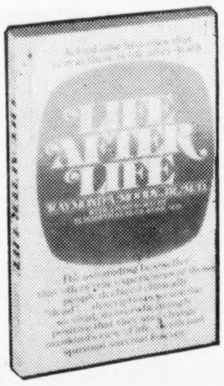

What is perhaps the most incredible common element in the accounts I have studied, and is certainly the element which has the most profound effect upon the individual, is the encounter with a very bright light. Typically, at its first appearance this light is dim, but it rapidly gets brighter until it reaches an unearthly brilliance. Yet, even though this light (usually said to be white or "clear") is of an indescribable brilliance, many make the specific point that it does not in any way hurt their eyes, or dazzle them, or keep them from seeing other things around them (perhaps because at this point they don't have physical "eyes" to be dazzled).

Despite the light's unusual manifestation, however, not one person has expressed any doubt whatsoever that it was a being, a being of light. Not only that, it is a personal being. It has a very definite personality. The love and the warmth which emanate from this being to the dying person are utterly beyond words, and he feels completely surrounded by it and taken up in it, completely at ease and accepted in the presence of this being. He senses an irresistible magnetic attraction to this light. He is ineluctably drawn to it.

●

The reason why death is no longer frightening, as all of these excerpts express, is that after his experience a person no longer entertains any doubts about his survival of bodily death. It is no longer merely an abstract possibility to him, but a fact of his experience.

●

Many persons report being out of their bodies for extended periods and witnessing many events in the physical world during the interlude. Can any of these reports be checked out with other witnesses who were known to be present, or with later confirming events, and thus be corroborated?

In quite a few instances, the somewhat surprising answer to this question is, "yes." Furthermore, the description of events witnessed while out of the body tend to check out fairly well. Several doctors have told me, for example, that they are utterly baffled about how patients with no medical knowledge could describe in such detail and so correctly the procedure used in resuscitation attempts, even though these events took place while the doctors knew the patients involved to be "dead."

●

I know of a few cases in which a suicide attempt was the cause of the apparent "death." These experiences were uniformly characterized as being unpleasant.

As one woman said, "If you leave here a tormented soul, you will be a tormented soul over there too." In short, they report that the conflicts they had attempted suicide to escape were still present when they died, but with added complications. In their disembodied state they were unable to do anything about their problems, and they also had to view the unfortunate consequences which resulted from their acts.

Death: Current Perspectives

An anthology with all good stuff and no fillers. Doctors, historians, psychologists, psychiatrists, journalists, anthropologists, lawyers thinking new thoughts about death and noticing how odd the old thoughts are. Seems like most of this will be new no matter what kind of specialist you are.

—Anne Herbert

Death: Current Perspectives
Edwin S. Shneidman, Ed.
1976; 547 pp.

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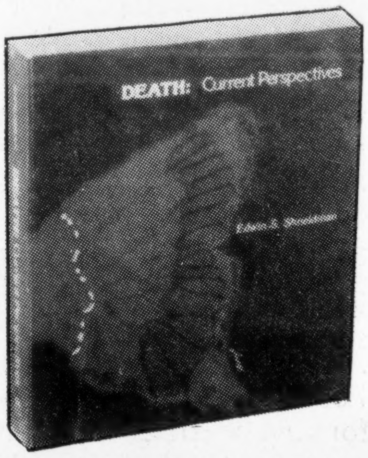


In the 20th century there seems to have been an unremarked shift in prudery; whereas copulation has become more and more "mentionable," particularly in the Anglo-Saxon societies, death has become more and more "unmentionable" *as a natural process*. I cannot recollect a novel or play of the last twenty years or so which has a "death-bed scene" in it, describing in any detail the death "from natural causes" of a major character; this topic was a set piece for most of the eminent Victorian and Edwardian writers, evoking their finest prose and their most elaborate technical effects to produce the greatest amount of pathos or edification.

One of the reasons, I imagine, for this plethora of death-bed scenes — apart from their intrinsic emotional and religious content — was that it was one of the relatively few experiences that an author could be fairly sure would have been shared by the vast majority of his readers. Questioning my old acquaintances, I cannot find one over the age of sixty who did not witness the agony of at least one near relative; I do not think I know a single person under the age of thirty who has had a similar experience.

●

Before a twenty-year-old who arrives in the ER [emergency room] with a presumption of death, attached in the form of an ambulance driver's assessment, will be pronounced dead by a physician, very long listening to his heartbeat will occur, occasionally efforts at stimulation will be made, oxygen administered, and oftentimes stimulative medication given. Less time will elapse between initial detection of an inaudible heartbeat and nonpalpable pulse and the pronouncement of death if the person is forty years old, and still less if he is seventy. As well as can be detected, there appeared to be no obvious difference between men and women in this regard, nor between white and Negro "patients." Very old patients who are considered to be dead, on the basis of the ambulance driver's assessment, were seen to be put in an empty room to "wait" several moments before a physician arrived. When a young person is brought in as a "possible" [Dead on Arrival], the ambulance driver tries to convey some more alarming sense to the arrival by turning the siren up very loud and continuing it after he has already stopped, so that by the time he has actually entered the wing, personnel, expecting "something special," act quickly and accordingly. When it is a younger person that the driver is delivering, his general manner is more frantic. The speed with which he wheels his stretcher in, and the degree of excitement in his voice as he describes his charge to the desk clerk, are generally more heightened than with the elderly "DOA." One can observe a direct relationship between the loudness and length of the siren alarm and the considered "social value" of the person being transported.

●

Developmental psychologists and educators tend to emphasize the young child's lack of conceptual ability. He is not yet mentally equipped to understand death. But the corollary too often is neglected: the young child tries to understand.

HOSPICE IN AMERICA

BY LYNETTE JORDAN

Candy Carter

An example of home care by Hospice of Marin, California, Spring, 1977.

A humanistic approach to supportive care for the terminally ill is gaining support in the United States. The concept involves the "hospice" as a special facility for care of terminally ill patients. Staff is trained to support the psychological, spiritual, and personal needs of the patient in a friendly and warm atmosphere. Because of funding and licensure problems, however, the hospice concept in the United States is developing as an alternative home care program.

In medieval times, a hospice was a resting place for travelers on pilgrimages to the Holy Land. The present concept of a hospice as a nursing facility for terminal patients began in the mid-nineteenth century when the Irish Sisters of Charity opened the first hospice in Dublin, Ireland. Around the turn of the century, four hospices started in England. Today, England has about 30 hospices with a total capacity of almost 1000 beds for terminally ill patients.

The institutional model for the hospice philosophy is St. Christopher's Hospice, London (Sydenham), England. One of the chief innovators in care of the dying is Dr. Cicely Saunders, O.B.E., director of St. Christopher's. The hallmark of treatment at the hospice is meeting the patient's physical, psychological, and spiritual needs on an individual basis. Many patients are able to go home for a time. St. Christopher's stresses family involvement with a playgroup for children of hospice staff, a wing for senior citizens, no fixed visiting hours and encouragement of visits from all members of the family, including children and pets.

> *This concise report of the growth of hospice care in America is reprinted from the Dec. 28, 1976* **CHA Insight** *($10/36 issues from California Hospital Association, 925 L St., Suite 1250, Sacramento, CA 95814). The second illustration and patient's poem are from the Annual Report (1975-76) of St. Christopher's Hospice (51 - 53 Lawrie Park Rd., Sydenham, SE26 LDZ, England).*
>
> *—SB*

St. Christopher's is also noted for the work done to relieve symptoms and intractable pain associated with terminal cancer. Brompton's mixture containing diamorphine (heroin), cocaine, alcohol, syrup, and chloroform water is given orally every four hours. In a recent talk at Saint Agnes Medical Center in Fresno, Sister M. Raphael, CSC, a recent visitor to St. Christopher's notes, "There are no clock watchers at St. Christopher's Hospice. The patient is regarded as the leader in his own pain control."

In writing of his 1974 visit to the hospice, Dr. Leonard M. Liegner of St. Luke's Hospital Center in New York City suggests that the object of the hospice drug regimen (polypharmacy) "is to maintain an integrated functioning individual who is neither in pain, nor symptomatic in any other area and who, if able, can be alert to his surroundings and the people about. . . . Median length of stay of patients is two to three weeks, 16 percent dying within hours or 24-28 hours after admission," Dr. Liegner says.

Hospices traditionally make use of large numbers of volunteers, often derived from families of former patients. Help for the family of the dying patient is stressed. St. Christopher's offers the following departments: administrative, medical, nursing, reception, home care, bereavement, dietary, transportation, children's nursery and day school, old age home, and ambulance.

One of the major benefits of the hospice concept for the patient is that nursing staff, clergy, and social service personnel are trained to care for the dying. Dr. Elizabeth Kübler-Ross, in **On Death and Dying**, defines five stages of death: denial and isolation, anger, bargaining, depression, and acceptance. Not all patients go through each stage in order. "The one thing that usually persists through all these stages is hope," Dr. Kübler-Ross writes.

"We have learned that for the patient death itself is not the problem, but dying is feared because of the accompanying sense of hopelessness, helplessness, and isolation," Dr. Kübler-Ross says. She also observes the "desperate need of the hospital staff to deny the existence of terminally ill patients on their ward." Physicians, it seems, have a tendency to view dying patients as evidence of failure of their personal curative powers and a constant reminder of their mortality. Dr. Kübler-Ross notes, "Our goals should not be to have specialists for dying patients but to train our hospital personnel to feel comfortable in facing such difficulties and to seek solutions." This is a major goal of hospice movement.

The hospice group in the United States that is farthest along in program development is Hospice, Inc. in New Haven, Connecticut. Hospice, Inc. began its home care program in March, 1974. As of December 15, it had cared for 300 patient/families; 206 of the patients died during this period, 54 percent of them at home. Nationally, 32 percent of cancer victims die at home.

Direct costs of the home care program are covered by contract with the National Cancer Institute until September, 1977. Hospice, Inc. plans to begin construction of a freestanding facility in Branford, Connecticut, next year. Architectural plans call for a 44-bed facility.

The proposed building will have two V-shaped patient wings attached to a service and administration area. There will only be four private rooms; the rest will be four-bed rooms. Patients are encouraged to bring furniture and personal items from home. Special features of the design include: two corridors, one a private corridor off the patient's wing leading to conference rooms and bathrooms, the other a public corridor next to a greenhouse-sitting room area. Two family rooms with fireplaces, a library, a sky-lit chapel and fountain-patio area are also planned.

Hospice, Inc. elaborated on the following home care objectives in its 1975 Annual Report:

- To lighten the burden of a traumatic life experience by sharing and meeting the expressed needs (physical, emotional, spiritual, and social) of the cancer patient/family, where the prognosis precludes an aggressive rehabilitative endeavor.
- To assist the patient to achieve and maintain living and death with dignity.
- To minimize the painful and damaging effects of the death of the family member upon the family which remains.

Hospice, Inc. has a staff of 54 volunteers and 30 paid staff members. The National Cancer Institute covers costs for the home care program. Patients receiving hospice services are not charged. Funding for the rest of hospice depends upon private foundation and individual donations. Medicare and Medicaid do not reimburse for care of hospice patients.

The hospice concept is also working within hospitals, both on the East Coast and in California. St. Luke's Hospital Center in New York City has established an inpatient hospice program.

In January of 1975, a palliative care unit (PCU) was set up at Royal Victoria Hospital in Montreal. The 12-bed unit began as a two-year pilot project. In addition to research, teaching, administrative functions, the terminal care unit contains the PCU, home care, and consultation services. In citing the need for such services in a hospital, PCU director Dr. Balfour M. Mount says, "The problem arises when we introduce into this general hospital environment patients for whom the hard-won expertise of the health care team is no longer appropriate.

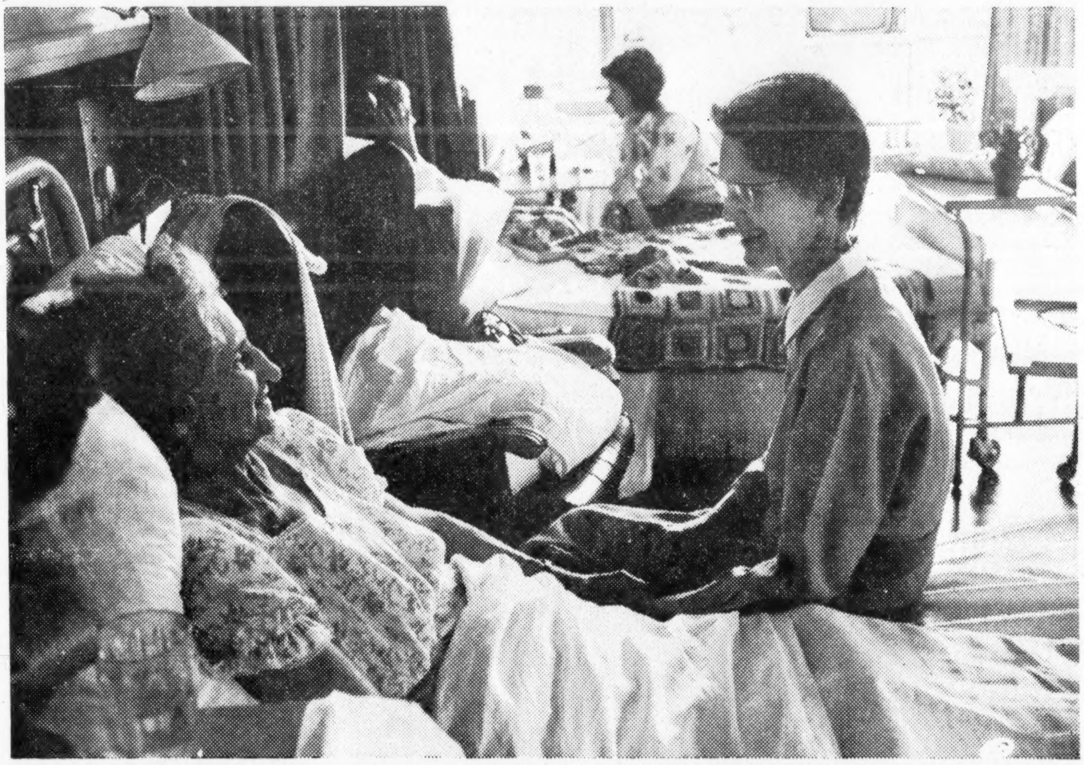
"In the management of the dying, skills of investigating, diagnosing, curing and prolonging life are irrelevant. The appropriate goal is treatment aimed at producing the optimal quality of life for the patient and his family. . . . From the perspective of traditional hospital goals 'nothing can be done' for the dying patient. Thus, the medical team feels impotent and may become angry or indifferent," Dr. Balfour says.

By integrating a palliative care unit in the hospital, the facility can better meet the needs of the dying patient, Dr. Balfour believes. The patient does not feel deserted by the hospital.

In another attempt to integrate hospice concepts into existing facilities, the Vince Lombardi Cancer Center of Georgetown University, which has had a home care program for years, plans to convert a floor of the Washington Home for Incurables into a hospice for 25 terminal patients, according to an article in **Science**, July 30, 1976.

The hospice concept is also gaining momentum in California with groups organizing throughout the state. There are no hospices in California with a freestanding inpatient facility, although several organizations have home care programs.

In a little over a year, Hospice of Marin, a nonprofit organization based in Corte Madera, has increased its capacity to 23 patient/families. Dr. William M. Lamers, medical director of the hospice, heads a team of nurses, therapists, pharmacological consultants, clergy, and trained volunteers that provides home care services for terminally ill cancer patients. Some of the staff members are paid minimal salaries, the rest volunteer their services. Early in October, the Cowell Foundation awarded Hospice of Marin a



Derek Bayes

St. Christopher's Hospice in England, founded by Dr. Cicely Saunders, has more than one nurse for every patient bed. The extra is to handle teaching demands.

$30,000 grant to help cover operating expenses.

In addition to providing home care services, Hospice of Marin is actively involved in fund-raising activities and educational programs to increase public awareness about the hospice and the needs of the terminally ill. The group has the support of the Marin County Medical Society, Ross General Hospital, and Marin General Hospital.

"Marin has supported the hospice services from its inception," says Ray Bolinger, administrator of Marin General. "We feel it is closely related with continuity of care in terminally ill patients." Marin nursing staff members also attend hospice meetings and thus, are informed of a patient being admitted who has been receiving hospice services. In turn, the hospital also informs the hospice of patients who could use its follow-up services.

At least one California hospital is integrating hospice concepts into its home care program. In July, St. John's Hospital in Oxnard implemented Mercy Hospice – a hospice-type home care program for cancer patients. Susan Storch, R.N., St. John's home care liaison, works with oncology patients both in their homes and in the hospital. She is actively handling 10 cases and counsels 30-40 patient/families on an occasional basis.

Recently, St. John's Board of Directors assigned one bed to Mercy Hospice. This bed will be used for insurance patients whose insurance coverage has ended. The hospital will cover the rest of the costs for the patient in the "hospice" bed. Eventually, staff would like four beds together in the hospital's oncology ward to be used as a hospice. Designated beds in the hospital can be used to relieve the pressure on families as primary care givers. They can also be used for patients who do not have a family. "Administration has begun to solidly back our program," says Richard Ames, director of social services.

Hospice of Santa Barbara, Inc., incorporated in December of 1974, has yet to begin a home care program. The group has applied for National Cancer Institute support for program implementation. It has 200 members and supports a speaker's bureau to acquaint citizens of Santa Barbara County with the hospice concept.

In addition to Santa Barbara Hospice, Southern California Kaiser Permanente Medical Care Program is one of 12 groups in the nation to apply for contract funding from the National Cancer Institute's Division of Cancer Control and Rehabilitation to begin a home care program. Dr. Harvey Gilbert, Radiotherapist at Kaiser's Sunset Boulevard hospital, told "CHA Insight" that Kaiser takes care of over a million persons in Southern California and that hospice is a natural extension of the total care concept. "The ideal in America is to keep patients at home as long as possible," Dr. Gilbert says. He indicates, however, that "probably one out of three patients is alone."

Kaiser proposes to open a 20-bed hospice in a vacant hospital building in Norwalk. The decision that patients will no longer benefit from treatment and should go to the hospice will be a joint decision of the physician, patient, and family. Part of the Kaiser hospice concept involves establishing a pain clinic and use of clergy and nursing training programs.

Another fledgling Southern California group is San Diego Hospice, which is in the process of incorporation. At the present time, 20-30 interested persons meet monthly to plan a hospice home care program. Another group interested in the hospice concept has been meeting in recent months at the central Los Angeles office of the American Cancer Society.

The groups mentioned in this article are not the only ones interested in establishing hospice-type home care programs in California. The medical community is paying increasing attention to meeting needs of dying patients. The work of Dr. Kübler-Ross and other physicians, court cases involving the definition of death, and California's Natural Death Act are some of the developments that have spurred interest in hospices and the care of the terminally ill.

The development of hospices in the United States is in the embryonic stage. The groups that are developing hospice home care programs are trying to create programs that meet the needs of the community being served. Thus, different methods of caring for the terminally ill are evolving. Hospitals are becoming more aware of the problems of dealing with terminally ill patients.

"The problem is not with the dying patient. The problem is our own feelings about death. In most cases, we can't bear to see the patient lose control of his life because we wouldn't want that for ourselves," says Jacky Crawford, L.C.S.W., in an article in Herrick Memorial Hospital's "The Hospitaler" in August.

"We hold our feelings inside and get defensive. We can sound very cold and uncaring and intellectual. Or, we stay away from the dying patient's room."

To combat this phenomenon, Crawford has held several workshops for physicians and hospital employees on working with terminally ill patients. At the workshops, health professionals can share their feelings about death and learn to approach dying patients and their families with increased sensitivity and understanding.

"Death is a part of our existence. We have to see it as part of life from the day we're born," says Dr. E. Mansell Pattison. Dr. Pattison recently edited "The Experience of Dying," an analysis of research involving death and dying patients. Pattison has found that "people view death differently at different life stages. Their attitudes toward their own deaths vary depending on the type of death that is forecast and the degree of uncertainty of . . . the period of time that must be lived through while awaiting death."

There is still much to be learned about caring for terminally ill patients. The hospice concept is gaining support simply because the need is so great. Dr. Cicely Saunders writes, "The most important principle of all is regard for the patient at this stage of illness. Wherever an institution is established for them it should be not a monument to the incurability of some cancers, but a monument to the enduring dignity of man." ■

IN THE MIDST OF LIFE

Death and I are only nodding acquaintances
We have not been formally introduced
But many times I have noticed
The final encounter
Here in this Hospice,
I can truly say
That death has been met with dignity
Who can divine the thoughts
Of a man in close confrontation!
I can only remember
One particular passing
When a man,
With sustained smile
Pointed out what was for him
Evidently a great light
Who knows what final revelations
Are received in the last hours?
Lord, grant me a star in the East
As well as a smouldering sunset.

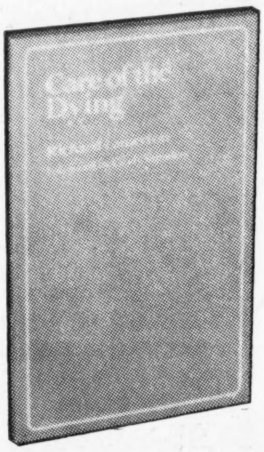
Sidney G. Reeman (28.1.75).

One of over 40 poems written by Mr. Reeman during the four months he was in St. Christopher's.

Care of the Dying

In bad times, a friendly culture has customs and traditions and etiquette and folklore and rituals that tell you what to do with pain and love. Our culture isn't friendly with dying and the only advice it gives is to lie a lot. If you decide to be honest and loving with a dying person, it's hard to know what to do specifically. Dr. Richard Lamerton works at St. Christopher's Hospice in England, and he has advice for medical people and family and friends about exactly how to help when they feel very helpless.

—Anne Herbert



Care of the Dying
Richard Lamerton
1973; 160 pp.
$1.50 postpaid
from:
R. L. Sassone
900 North Broadway, Suite 725
Santa Ana, CA 92701

On their death beds many men mature wonderfully. Priorities fall into place, tolerance and courage may grow in the most unlikely soil and more amazing still is the serenity which so often comes to one from the dying. Much of the work of those caring for the dying is to prevent anything arising which may hinder this growth in the patient's being. He must be free from pain, but still alert; he must be told as much of the truth about his condition as he can cope with, but no more; he must be encouraged to turn his attention away from himself, and must be given a clean example of real service.

When a man's responsibilities drop away, either by reason of physical weakness or of senile dementia, there remains a great beauty which has been covered by busy-ness — or laziness — for many a year. Death removes the covers: this unmasking can be a thrilling revelation.

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People feel helpless beside the dying because they do not realize that what counts is their presence, not their activity. They may feel guilty because the mind plays with irrelevant thoughts, taking attention off the dying person. They should be encouraged to touch the patient — hold his hand for instance — for this will be one of his last channels of reassurance. To the last he can be assumed to hear all that is said. Often a flicker of a smile or a faint squeeze of a finger will confirm that the message has been received.

Distress in the last hour is rare and the fear of it is a morbid twist in our culture. The idea of suffering may well be projected on to a person by distressed spectators who are in fact dreading their own imminent bereavement. There is, on the contrary, almost always a rather beautiful giving-in. The person withdraws serenely and willingly, as gently as an ocean liner slips away from the quayside. Sometimes there may be a brief period of complete lucidity, as in the case of Mr. B. who, when I went to say good-bye, suddenly opened his eyes and said to me, "I'm joining your flock now, Doctor. I hope the coffin is ready. Cheerio!"

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The English like to grieve in staunch silence, but this is not a universal behaviour pattern, and people should be allowed to grieve in their own way. I can remember a horrified nun in St. Joseph's Hospice who recounted how seventeen members of an old Italian grandfather's family gradually gathered round his bed during his last night. They waited tense and poised as his breathing failed. Sister knelt beside him, repeated the prayers for the dying and felt his pulse. It flickered to a stop and she said, "He's gone now," whereupon the entire company burst out howling and two disconsolate women hurled themselves whooping across his chest in paroxysms of remorse. The corpse took a mighty gasping breath and uttered a final satisfied groan.

Living With Cancer

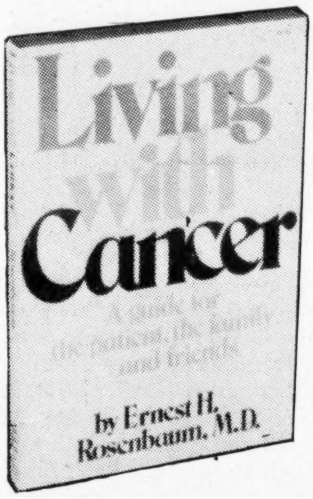
My most unforgettable relationships with patients have been with those who had cancer. For a time, through these friends, I have been able to keep constantly in mind the inevitability of my own death. Then, always, life moves on and one forgets.

Each time this has happened, I've been struck by what a gift it is to share another's world as he or she passes very close to dying. Increasing numbers of cancer patients are now surviving. To share an illness and recovery is a double gift.

Dr. Rosenbaum, a San Francisco cancer specialist, has been gifted in this way enough times to be able to look at cancer clearly, without panic or sentimentality, and to give us, in his own writings and through the writings of a number of his patients, a compassionate picture of the problems that face cancer patients.

Valuable reading. For people with cancer, their doctors, friends, and families — invaluable.

—Tom Ferguson


Living with Cancer
A guide for the patient, the family and friends
by Ernest H. Rosenbaum, M.D.

Living With Cancer
(A Guide for the Patient,
the Family and Friends)
Ernest H. Rosenbaum, M.D.
1975; 214 pp.

$4.95 postpaid

from:
Praeger Publishers, Inc.
P.O. Box 1323
Springfield, MA 01101
or Whole Earth

When the physician is dishonest, the patient thinks, 'If my doctor can't tell me, if he can't face it, it must be really terrible. What's the end going to be like?' The patient communicates this fear to his relatives and friends and soon the mood infects everyone.

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Disease rearranges your values and you cast off things. You do not put up with a lot of stuff in your own self. You reduce the trivia to a minimum. You simplify life, as Thoreau said, when you are under a death warrant.

There is nothing to be afraid of any more when you know you are going to die. It is liberating, very liberating. All the lies are dropped and it cleans up your life.

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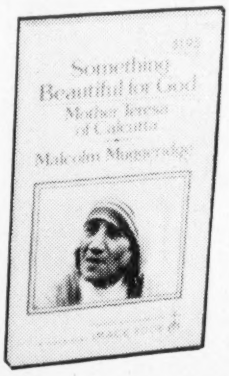
There is a myth that you will die if you have cancer. This is not true. Today one-third of all cancer patients are cured. The other two-thirds can be treated, and the majority of these, although not cured, are active, productive people.

Something Beautiful for God

Mother Teresa of Calcutta shelters and cares for hopelessly poor, hopelessly sick people who would otherwise die in the streets. She wants to give them hope by loving them. This book has too much Malcolm Muggeridge, but it's worth putting up with him to meet her. She lives a joyful life by always facing death.

—Anne Herbert



Something Beautiful for God
(Mother Teresa of Calcutta)
Malcolm Muggeridge
1971; 120 pp.

$1.95 postpaid

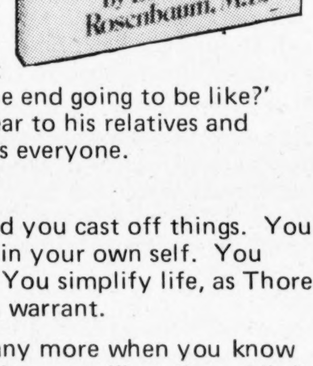
from:
Image Books
Doubleday and Co, Inc.
501 Franklin Avenue
Garden City, L.I., NY 11530
or Whole Earth

"First of all we want to make them feel that they are wanted, we want them to know that there are people who really love them, who really want them, at least for the few hours that they have to live, to know human and divine love. That they too may know that they are the children of God, and that they are not forgotten and that they are loved and cared about and there are young lives ready to give themselves in their service."

The People's Pharmacy

The book on drugs for the general reader. Written by a pharmacologist who knows his stuff, shoots from the hip, and includes lots of footnotes giving access to the medical literature. Highly readable and full of practical wisdom.

—Tom Ferguson


The People's Pharmacy
JOE GRAEDON
A GUIDE TO PRESCRIPTION DRUGS, HOME REMEDIES AND OVER-THE-COUNTER MEDICATIONS

The People's Pharmacy
(A Guide to Prescription Drugs,
Home Remedies and Over-the-Counter Medications)
Joe Graedon
1976; 401 pp.

$8.95 postpaid

from:
St. Martin's Press
175 Fifth Avenue
New York, NY 10010
or Whole Earth

What is the first thing you do after you are stung by a bee or insect? Most people probably scream a little, make futile efforts to remove the stinger, or possibly make a compress of mud or baking soda and smear it on the bite. Well folks, you can forget all those ineffective old-fashioned techniques. Now we have something that really works, and it is as close as your kitchen spice rack. *Meat tenderizer* is all it takes. Yup, just a little Adolph's (or your favorite brand) — applied as soon after the sting as possible — will do the trick. According to Dr. Harry L. Arnold (and the Health Insurance Institute), one quarter of a teaspoonful of tenderizer added to about one or two teaspoonfuls of water (enough to make a paste) will stop pain in seconds when it is rubbed into the skin at the area of the sting.

●

There is a marvelous drug which has been carefully tested and proved to be useful in helping arteriosclerosis and arterial thrombosis. Aspirin rears its lovely head once again. Now don't laugh. I promised succulent and specific handy home remedies. Aspirin may be the best of them all. In a study completed in 1974, it was determined that one single dose of three hundred milligrams of aspirin (one tablet's worth) could improve life expectancy by the incredible figure of 25 percent in men who had already suffered one heart attack.

Stretching

A lot of athletes — pro and amateur — are getting into mixing "hard" sports (football, swimming, running) with "soft" ones (yoga, stretching, t'ai Chi). P.E. teacher Bob Anderson teaches stretching clinics for professional and college athletic teams. His straightforward home-published book is a fine introduction to combining tension exercises with relaxation exercises. It includes special stretching routines for use before, during, and after running, swimming, cycling, football, tennis, basketball, etc. I've been doing his stretching routines before and after running. It makes quite a difference

—Tom Ferguson

Stretching
Bob Anderson
1975; 183 pp.
$7.00 postpaid

from:
Stretching
P.O. Box 2734
Fullerton, CA 92633

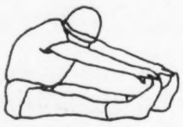


fig.1

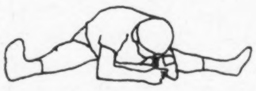
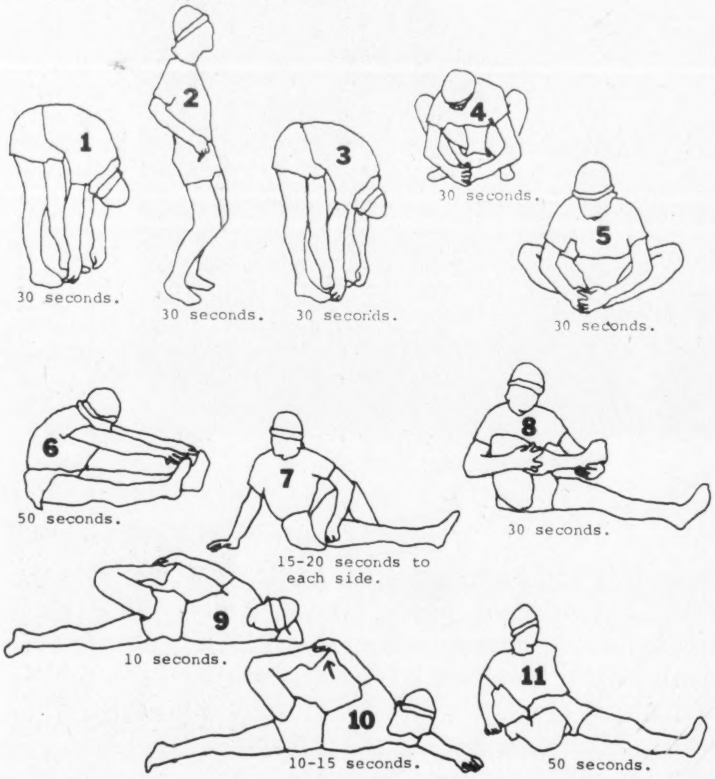


fig.2

A minimum test of flexibility sometimes used is sitting with legs straight, fingers touching toes (fig. 1) and sitting with legs spread, forehead on top of fists on the floor (fig. 2), holding each stretch comfortably for about fifty to sixty seconds.

A STRETCH ROUTINE FOR VOLLEYBALL:
(Total time = approximately 28 minutes)


2
4
1
3
30 seconds.
5
30 seconds.
30 seconds.
30 seconds.
30 seconds.
6
8
7
50 seconds.
30 seconds.
15-20 seconds to each side.
9
10 seconds.
11
10
10-15 seconds.
50 seconds.

Good Vibrations

An introduction to vibrators for masturbation for women. Where to buy, how to buy, which to buy, how to use alone and with friends. A reassuring helpful have-fun book.

—Anne Herbert

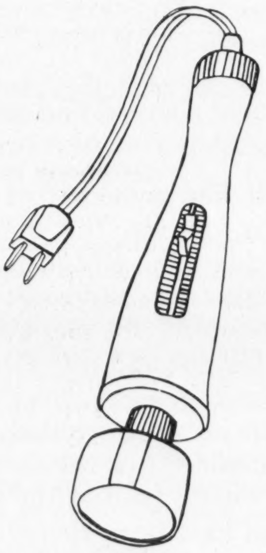
Good Vibrations
(The Complete Woman's Guide to Vibrators)
Joani Blank
1976; 43 pp.
$2.10 postpaid

from:
Down There Press
P.O. Box 2086
Burlingame, CA 94010
or Whole Earth

[Note: There is another book around with the same title which costs $5.95 and stinks.]

Wand-shaped vibrators

These are a relatively newfangled kind. They have a large cylindrical handle/motor, topped by a squat cylindrical head, usually connected by a flexible neck. These vibrators have only been available for the past five or six years. The highly touted Panabrator which had a variable speed dial is no longer being manufactured. Others of this style have two speeds but no rheostat for a smooth transition from gentle to wild. Wand vibrators buzz very fast — too fast for some women to use directly on their genitals, and most are not very quiet. They are super for relieving tension in the neck and back and for total body massage. If you want a really all-purpose vibrator and if you can afford it (cost: $25 and up), you will probably want this kind.



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For vibrators by mail: (request catalogs)

Eve's Garden
(woman owned and operated)
119 West 57th Street
New York, NY 10019

Multi Media Resource Center
1525 Franklin Street
San Francisco, CA 94109

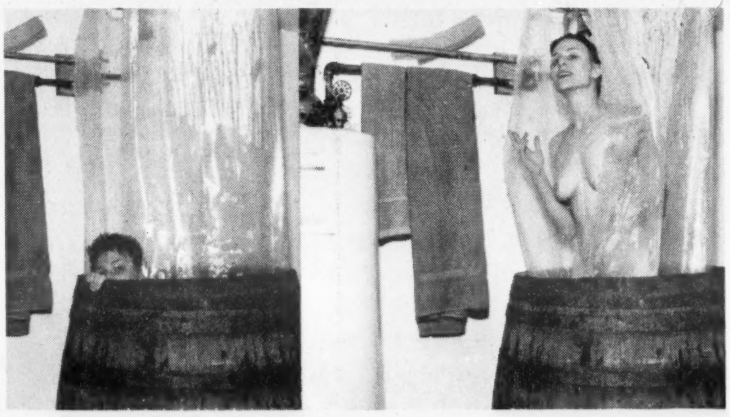
Wet

A nice bizarre magazine for gourmet bathers and others artfully self-preoccupied.

—SB

Wet
(The Magazine of Gourmet Bathing)
Leonard Koren, Ed.
$6.00 /6 issues
from:
Wet
200A Westminster
Venice, CA 90291

An adaptation to apartment living in Los Angeles wasn't too difficult for a seasoned New Yorker like Susan Doukas. Her first place in L.A. was at the bottom of a tri-level house built several decades ago by a respected major studio set designer and his buddy, a young man of sweat and muscle named John Wayne. . . . Except for a security alarm, Susan has kept the cost of her studio renovation to a minimum, but if she were to have to move again she claims she wouldn't necessarily choose a $40 wine cask for a bathtub unless the conditions for living called for it.



Goethe in the Pea Patch

BY J. D. SMITH

Hannelore and I had a dog we named Goethe. Goethe wasn't any bristling, nasty, fanged, Kraut, killer. He was, rather, an anemic, wheezy, drippy-eyed poorman's puppy imitation of the Tramp that Lady loved. We had, on one late winter's Saturday morning, ridden the bus into some Boston suburb and rescued him from the SPCA. (You'd better be kind to animals, so we don't have to gas them in our pounds.) He got his name partly because Hannelore was European, trilingual, hopelessly classic, and partly because the first thing the pup did after we had smuggled him into our Cambridge apartment was to Goethe the terlet all over a Navaho rug.

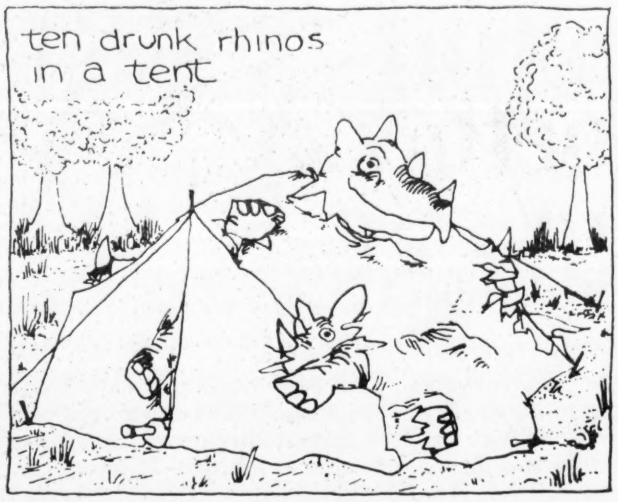
Hannelore worked as a librarian and translator at Harvard's Museum of Comparative Zoology, where she learned that clean skeletons were produced by throwing cadavers into a room full of omniverous beetles. I worked the graveyard shift in a twenty-four-hour bookstore, where I learned that I could keep Rodger the Smackhead in spending money by sleeping a few minutes each week while he filled his briefcase with fancy European art books, that there is nothing wrong with working with a gay man if you are a eyefucking womanwatcher (we would split the couples fifty-fifty), and that the doughnuts delivered to the cafeteria next door came two hours before they opened. (Note to prospective all-night bookstore owners: No literature gets sold from two a.m. to eight a.m. If you want the shelves restocked during those hours, hire a neutered speedfreak who desperately wants to learn the alphabet.)

Goethe and I were afternoon regulars in Harvard Square. I'd roll out about two, and we would wander out among the tourists and the scholars, grab a snack and a newspaper, then find a nice chunk of sod over by the Radcliffe tennis courts, where I'd watch leg muscles while Goethe pestered picnickers, tried crabgrass herbal remedies on his worm problems, and shat on the footpaths. Ah, Freedom. When the university bells rang the quitting-time carrols, the pup and I would putter back through the eye contact and pant legs to our house for trick time. Over the course of a couple of months of Goethe's puppyhood, we learned how to sit up, shake hands, and an amazing diving act, during which I would make tight kissing sounds and Goethe would fling his furry self off the mantle above the fireplace and into my trustworthy arms. Eventually, Hannelore would be home from work to cook supper for us.

Living the decadent-yet-misunderstood, proletarian, artist's life can, even in a college community, become a wretched energy sink. Hannelore gradually seemed to be picking only the "loves-me-not" petals from my activities. I began to wonder why I hadn't stayed back home and become a railroader. Hannelore pricked herself with pins and bled on the bathtub to scare me. I kicked the guts out of our television set. Our eyes found the alarm clock each night after supper. We both became flagrant masturbators. I blamed our mess on city living. She blamed Amerika. Finally we decided to move a little farther out of the bustle, to a place with a yard, for Goethe's sake.

In a couple of weeks we had rented a bright, windowed, third-floor flat, overlooking a good, green, fencedyard, with little garden plots all around the edge of the house. It was a full moist spring. Goethe loved his yard. I stole a bicycle for Hannelore to ride to work. She brought bright curtains home from the museum. Our neighbors were friendly, intelligent, older, almost sane. Things were looking up for us. I began to learn music. She began to translate Creeley and Olson into German and French. I tried to remember how my folks' gardens looked, read books on vegiculture, bought a shovel and some seeds. Goethe began to learn deportment from a spayed golden retriever.

Well, like my Grandad used to say, "You can't stick your foot into the same shoe twice." I began to spade up the plot, hauling gook from the edge of the Charles river and working it into the sandy fill along the house. The mailman took to getting barked at by Goethe and the retriever, but not with total joy, so on this sunny, soily day, I had left my pup upstairs in the apartment, with the windows open so he could watch my farming. I had just powdered up what was to be the pea patch, when, with what must have been Henny Penny's basic awareness, I looked up to see Goethe halfway between the third floor window and me, front legs extended, expecting me to catch him. He broke his neck right beside me. I hadn't had time to let go of the shovel, so it didn't take long to bury him. Never had the heart to plant anything else there. Not long afterward, Hannelore and I went our separate ways. ■



David Stanford

A few animal stories from Aristotle

Elephants suffer from flatulence, and when thus afflicted can void neither solid nor liquid residuum. If the elephant swallow earth-mould it suffers from relaxation; but if it go on taking it steadily, it will experience no harm. From time to time it takes to swallowing stones. It suffers also from diarrhoea; in this case they administer draughts of lukewarm water or dip its fodder in honey, and either one or the other prescription will prove a costive. When they suffer from insomnia, they will be restored to health if their shoulders be rubbed with salt, olive-oil, and warm water; when they have aches in their shoulders they will derive great benefit from the application of roast pork.

Historia animalium
Book VIII, Chapter 26

The tortoise, when it has partaken of a snake, eats marjoram; this action has been actually observed. A man saw a tortoise perform this operation over and over again, and every time it plucked up some marjoram go back to partake of its prey; he thereupon pulled the marjoram up by the roots, and the consequence was the tortoise died. The weasel, when it fights with a snake, first eats wild rue, the smell of which is noxious to the snake. The dragon, when it eats fruit, swallows endive-juice; it has been seen in the act. Dogs, when they suffer from worms, eat the standing corn. Storks, and all other birds, when they get a wound fighting, apply marjoram to the place injured.

Historia animalium
Book IX, Chapter 6

The male camel declines intercourse with its mother; if his keeper tries compulsion, he evinces disinclination. On one occassion, when intercourse was being declined by the young male, the keeper covered over the mother and put the young male to her; but, when after the intercourse the wrapping had been removed, though the operation was completed and could not be revoked, still by and by he bit his keeper to death.

Historia animalium
Book IX, Chapter 47

The bison is found in Paeonia on Mount Mesapium, which separates Paeonia from Maedica; and the Paeonians call it the monapos. . . . Owing to the savour of its flesh it is sought for in the chase. When it is wounded it runs away and stops only when thoroughly exhausted. It defends itself against an assailant by kicking and projecting its excrement to a distance of eight yards; this device it can easily adopt over and over again, and the excrement is so pungent that the hair of hunting dogs is burnt off by it. It is only when the animal is disturbed or alarmed that the dung has this property; when the animal is undisturbed it has no blistering effect.

Historia animalium
Book IX, Chapter 45.

Trans. D'Arcy Wentworth Thompson
Collec. J.D. Smith

Another bear story

It's no secret that the brown bears in certain parts of the Yosemite backcountry have grown quite fond of and accustomed to a wide variety of products imported from the flatlands below. Perhaps the most unusual tale I have ever heard drift across a campfire involves a woman who had washed her hair with one of those fruit essence shampoos prior to her departure into the 'wilds' of Little Yosemite Valley. It seems she was awaken in the night by the methodic lapping of a warm wet tongue against her freshly cleansed and perfumed locks. It wasn't her boyfriend. She wisely allowed the bear to finish its fruity dessert, and it wandered off in search of the next tent, and maybe some Quaker's 100 or some canned sardines.

Most sincerely yours,

Bruce R. Hagen
San Jose, California

2 from Pike County, Illinois

Here's one that might fit in. It's about the first automobile in Pearl. The local who owned the Model T was chugging along the dirt road that went up the bluff (it came to be a measure of a car's worth, to make it up the bluff without downshifting) and there was a rattlesnake by the road. The snake didn't know what the L that car was, and when it paused and growled by him, the rattler shook his tail and struck. Unfortunately he bit into a tire, and you know how a snake's fangs are hollow? He inflated and exploded right then and there.

A plant story, actually:

The last time Grandpa was in Pearl he noticed that all the paw paw trees were gone. He said it was a real trick to get good paw paws. If you got them off the tree they were too green. If you got them off the ground they were too ripe. You had to catch them as they fell.

—Steve Maynard
Orlando, Florida

Morris in Berkeley

When I was going to school in Berkeley in the late sixties, I shared one of those frame houses in the Flatlands. It was a nice house in sort of an ambiguous district. Not poor enough so your neighbors would rob you, but not rich enough to attract thieves from elsewhere. That's what the police report said anyway.

My roommate's parents lived in San Francisco. Nice district, somewhere near the ocean. Nice walks and lawns, big houses — all that. Well Suzanne had a cat over there and one weekend she decided she'd bring him over to live with us. I'm sure it was pretty harrowing for old Morris to spend three hours in a box on the bus. But, what awaited him in Berkeley was even worse. This beast was fat and tame and suburb spoiled. He didn't know the ways of the hungry Berkeley strays, and when he found out, he was horrified.

We were both against a litter box so Morris had to go out. But as weeks went by he was less and less willing. Extricating him from trees where the mangy neighborhood toms had chased him gave us an idea of his problems but we kept hoping he'd get tough. Finally it got to the point where we could only get him out once or twice a week. And that required tossing him far enough so we could slam the door before he got back in.

It was at about this time that I started hearing funny noises in the bathroom. Like water running or something. I ignored it for a while but pretty soon I got too curious. I waited for it to happen the next time and then dashed to the bathroom. To my astonishment I discovered Morris straddeling the toilet doing just what he'd seen the people do! My contempt for his cowardice turned to admiration for his brains.

—Penelope Diamanti
Jamestown, Colorado

CQ *solicits animal stories, pays $10 on publication.*

Cockroach letter 1

Dear CoEvolution,

In order to launch a new offensive in the Urbanite-Roach War I solicit from your readers the accumulated wisdom of their years of cockroach watching, killing, and loathing; a diversity of information gathered from many "home laboratories" might very likely indicate weaknesses in roach defenses that could be exploited for a surprise attack, perhaps not resulting in eradication, but at least forcing a more comfortable detente between these domesticated nuisances and their beleagured hosts. The chemical companies have no scientific interest in these creatures beyond that knowledge which perpetuates the sales of their quickly useless poisons. I ask that we desist from quick chemical nonsolutions and get down to a real study of the roach in our own homes, that we become biologists rather than consumers. The professional roach scientists are obviously in the employ of the poison companies; we amateurs can rely but on ourselves for a new approach to roach control.

Our first step is to accumulate information about roach behavior and human relations to roaches. I pose the following questions to stimulate replies:

With what substances, strategms, folk wisdom, family secrets, charms, attitudes, vibes, do you approach your roaches?

Have you found a use for your roaches? Is the encyclopedia fact that roaches, fried in oil and garlic, are eaten as a folk remedy for stomach disorder true and still practiced?

Is anyone working on a roach pheromone? Why not?

When I wash roaches down the drain do they crawl back up? What does it take to drown a roach, to boil one?

By squashing baby roaches whenever possible am I killing mainly the slowest ones and thus selectively breeding faster roaches?

Is the roach tactic of using gravity to simply drop from a vertical surface when squashing is imminent a new behavioral defense? Is roach behavior evolving discernibly? What can oldtimers tell us about the roaches of yesteryear?

Let's gather information, wake up our minds, and find a new way of relating to roaches, an "organic" approach to the problem. Perhaps an issue of CoEvolution could be devoted to findings of this survey. Roaches travel the earth on ships and will probably be among the ranks in the first space colony. Shall we yield to these presumptuous creatures a carte blanche to the stars? I await your replies.

In insect struggle,

Don Pollock
New York City

Cockroach letter 2

Dear Editor and Readers of CQ,

For the past two years I have been working for the United Nations in Bangladesh. The image most people have of Bangladesh is one that has been consistently promoted by the international press, namely that of a pitiful "basket case." But the reality is that Bangladesh is an incredibly fertile ground for the development of appropriate agricultural technology. It is my belief that the experimentation being presently carried out here will yield a situation in which Bangladesh will be able to export agricultural technology to the west and elsewhere by the beginning of the next century.

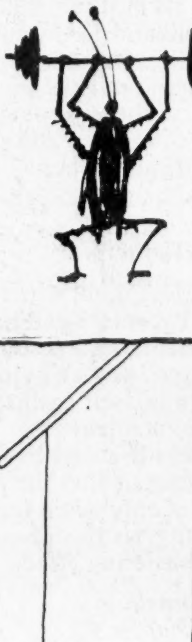
With this in mind, many of us have been trying to work out unconventional approaches which we hope will expedite rural development. One of these concerns the use of cockroaches as fertilizer, fish-feed, fuel and possibly as an emergency protein source for human consumption.

We will always have cockroaches with us, in every clime and condition. Why not give them a chance to play a vital role in the development — and the survival — of the world? The cockroaches in Bangladesh are among the healthiest and most substantial I have ever seen — at their biggest they are almost 4 inches long and can fly like birds. So Bangladesh seems the ideal place for experimentation into ways of putting cockroaches to use in enriching the soil; providing food for fish being bred in various inland fisheries projects; developing ways for cockroaches to be used as a viable emergency fuel; and experimentation with recipes for the human consumption of cockroach and cockroach byproducts. Already in Thailand and several other southeast asian countries cockroaches are eaten as a delicacy. Roasted over an open fire, they taste a bit like crunchy shrimp.

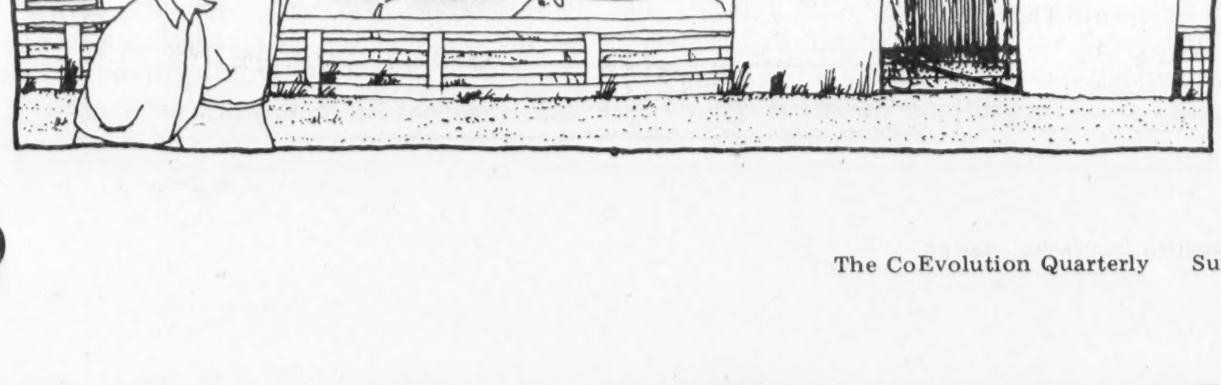
I am sure this idea is not new. A few of us here have a plan to develop a research programme to test the feasibility of such an approach. Maybe some of the CQ readership can supply me with information on any past and current research in this area, to aid me in the formulation of a plan of action. Send it direct to me at the address given below.

Yours sincerely,

Bettyann Lopate
c/o LOPATE
636 Brooklyn Avenue
Brooklyn, New York 11203



Gilbert Shelton



I hear your new bull is pretty tall

David Stanford

Turkey Drop

BY TERRENCE WILLIAMS

Last Saturday the Junior Chamber of Commerce in the small town nearest us held a Farmer's Appreciation Day to let us know how much they love us. Their love is matched only by that of politicians in an election year. They have a free dinner and all the store clerks dress up in funny clothes. The merchants drag out the seconds and imperfect goods, jack up the price thirty-five percent, put up a red bargain sign, and we lap it up.

This year as an added fillip they decreed a turkey drop. This was a gimmick thought up in the late forties where they took a hundred ping pong balls, put special marks on six, and dropped them over a town. The finders of the six specially marked balls got turkeys. The Junior Chamber had heard of the turkey drop, but not about the ping pong balls.

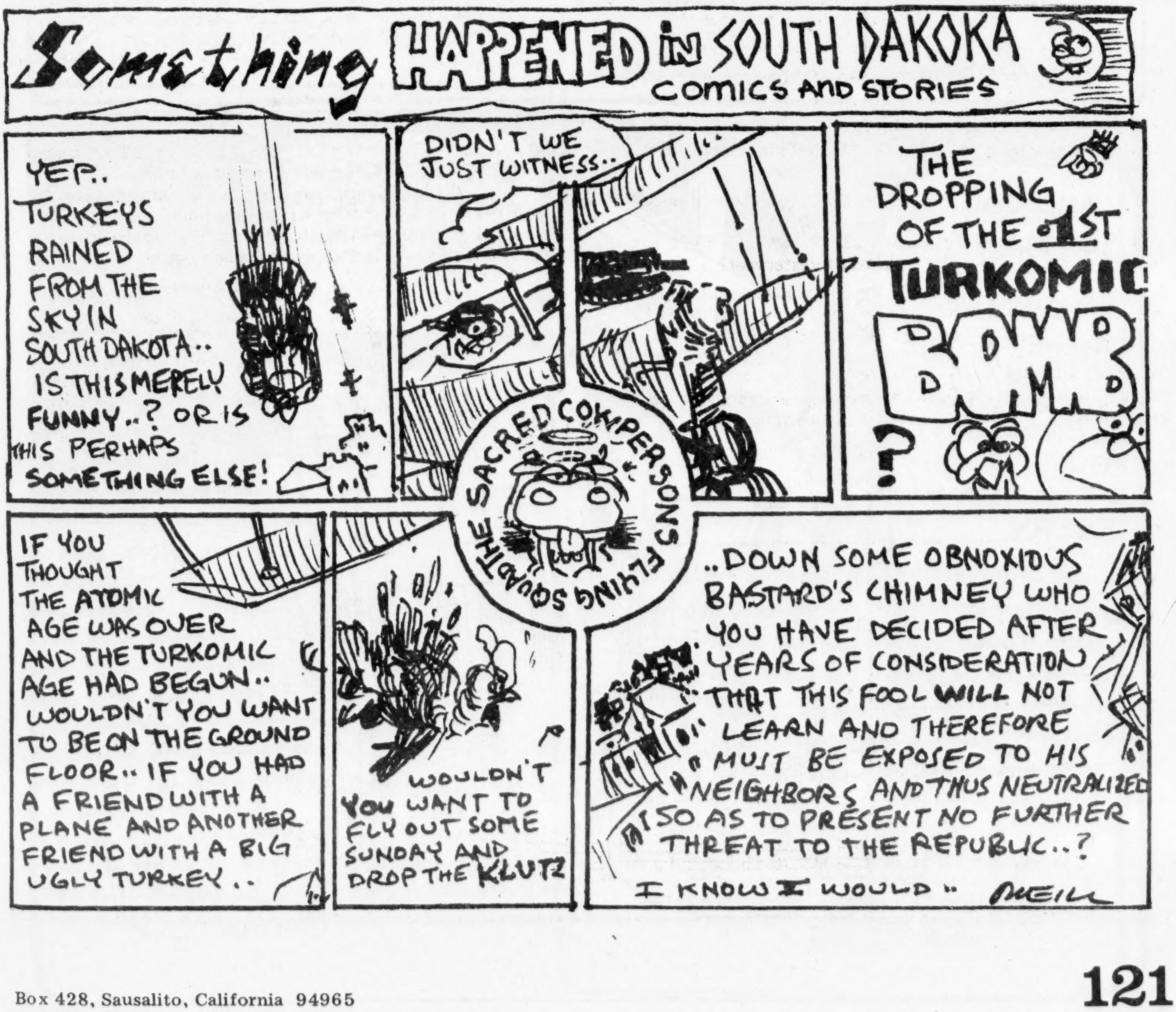
The advertising said Catch Your Easter Turkey. Alas, this was not to be.

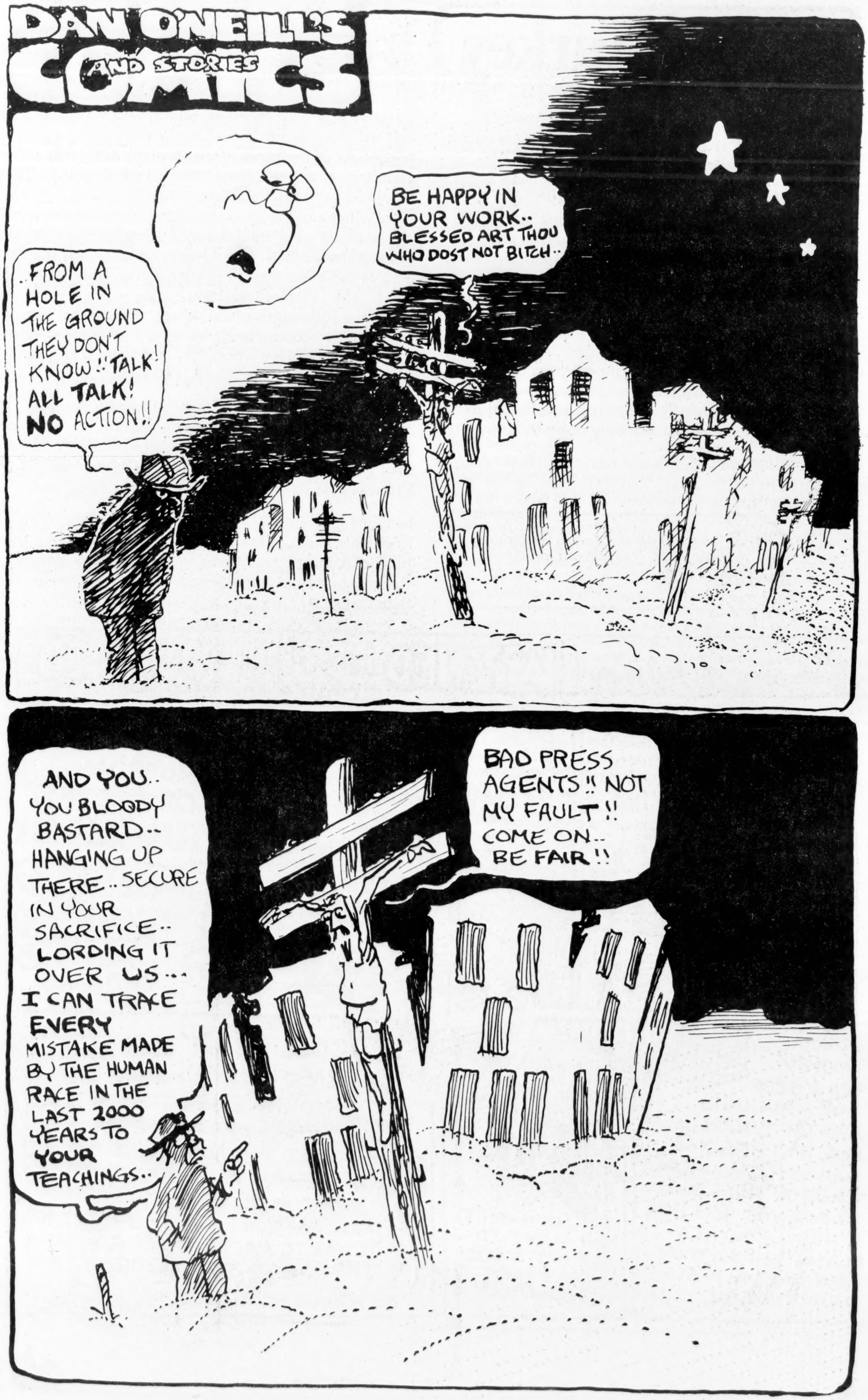
> *The author may be found at Williams Farms, Gettysburg, South Dakota, founded 1884. His account, unlike some animal stories, is true.*
>
> —SB

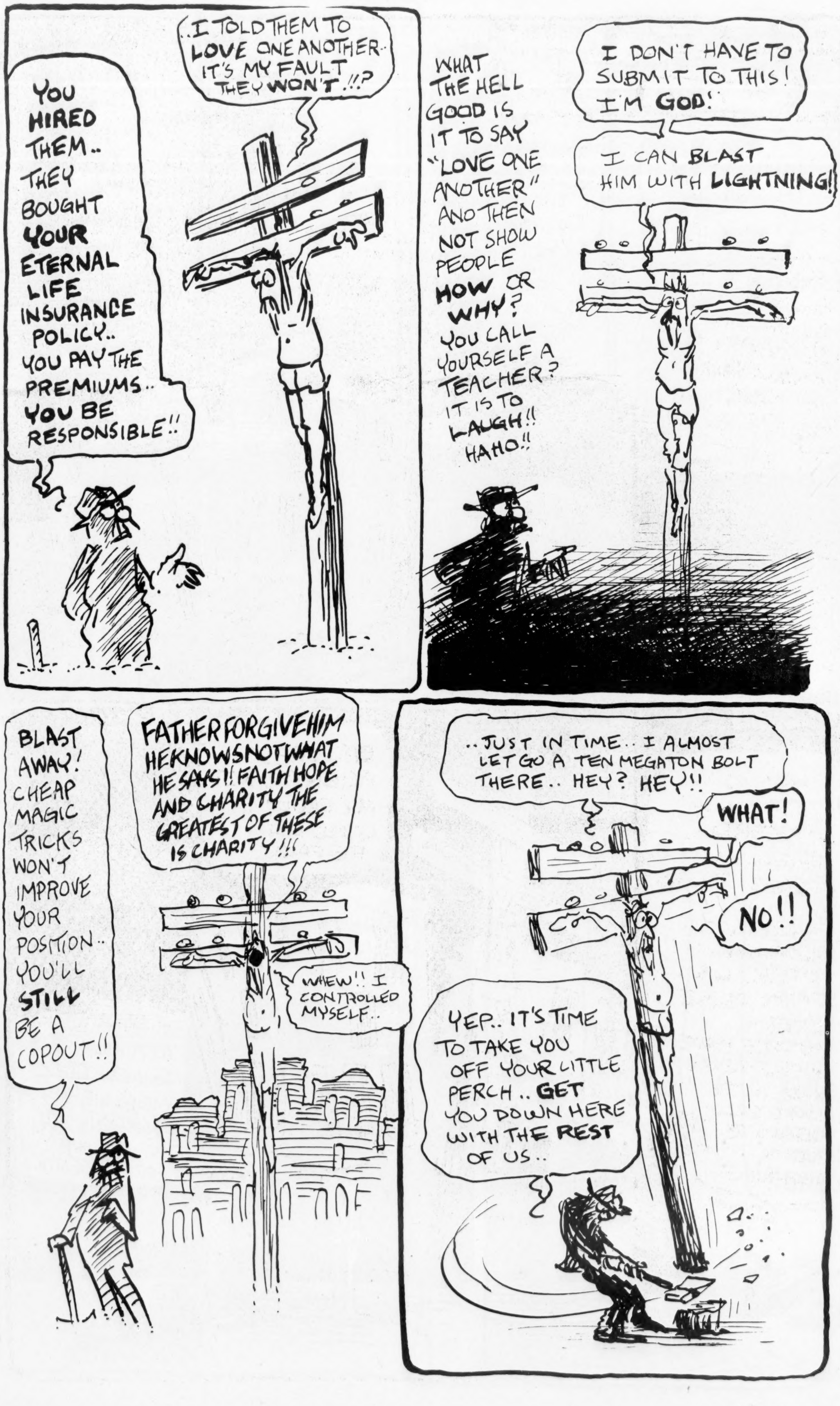
Turkeys don't fly very well, and never more than a few feet off the ground. So when the earnest young men pushed six of them out of a light plane 3000 feet above main street, the birds knew they were doomed. They accepted their fate with great dignity. They folded their wings and dropped straight down on to the crowd below like six huge black rocks. One hit the roof of the bank where it will doubtless remain until the directors can see a way to profit by its removal. The rest hit the pavement with enormous splats at intervals along the full length of the street. Fortunately no one was hit because being hit by a forty pound tom at terminal velocity would be fatal to man and bird. As it was, it was abundantly fatal to bird.

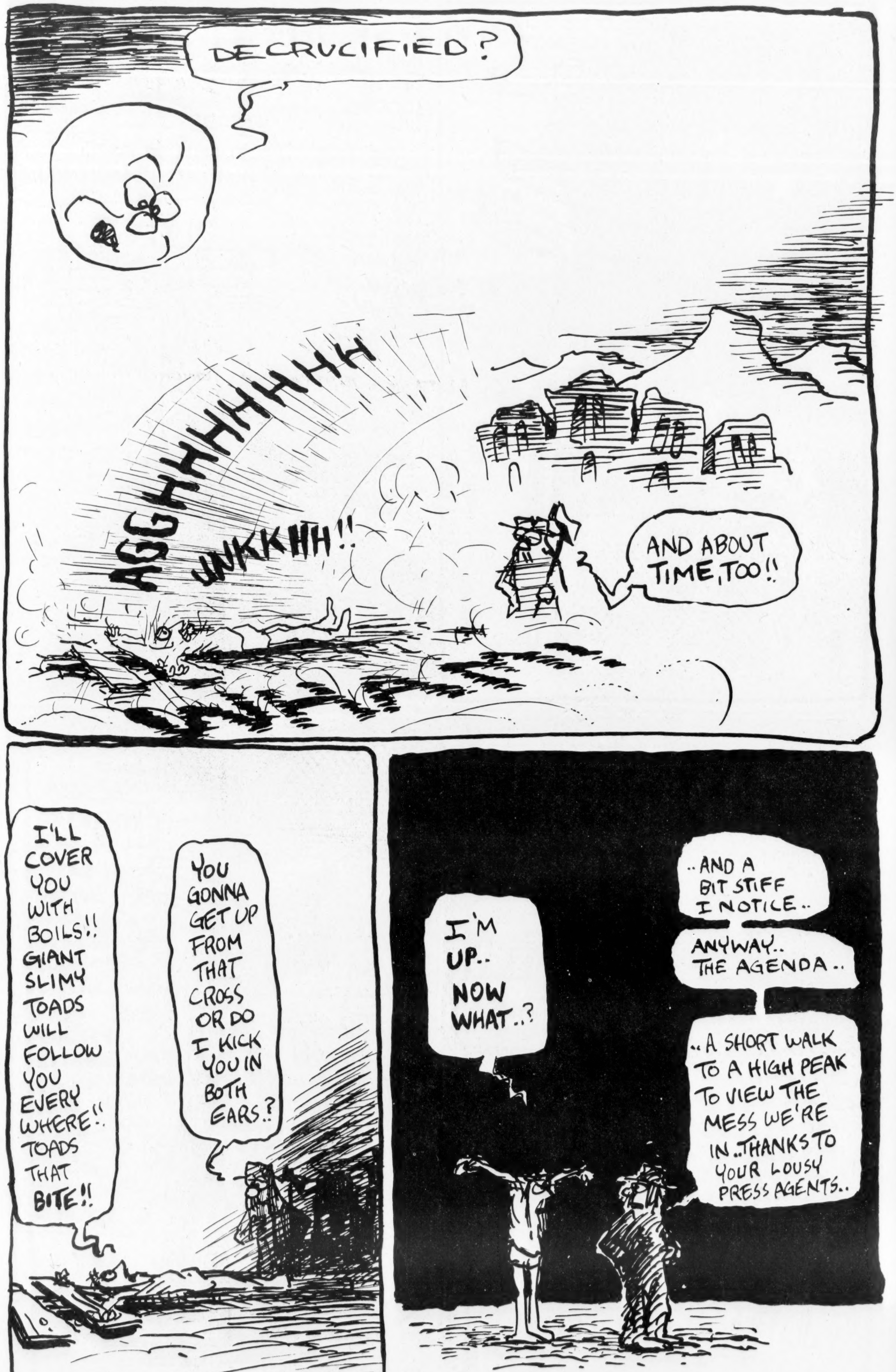
One tight skinned matron was standing a few feet from the second to strike, and her south-west exposure was instantly and generously covered with blood and fowl guts and two fronds of entrails festooned her hat. She was able to contain her glee better than I.

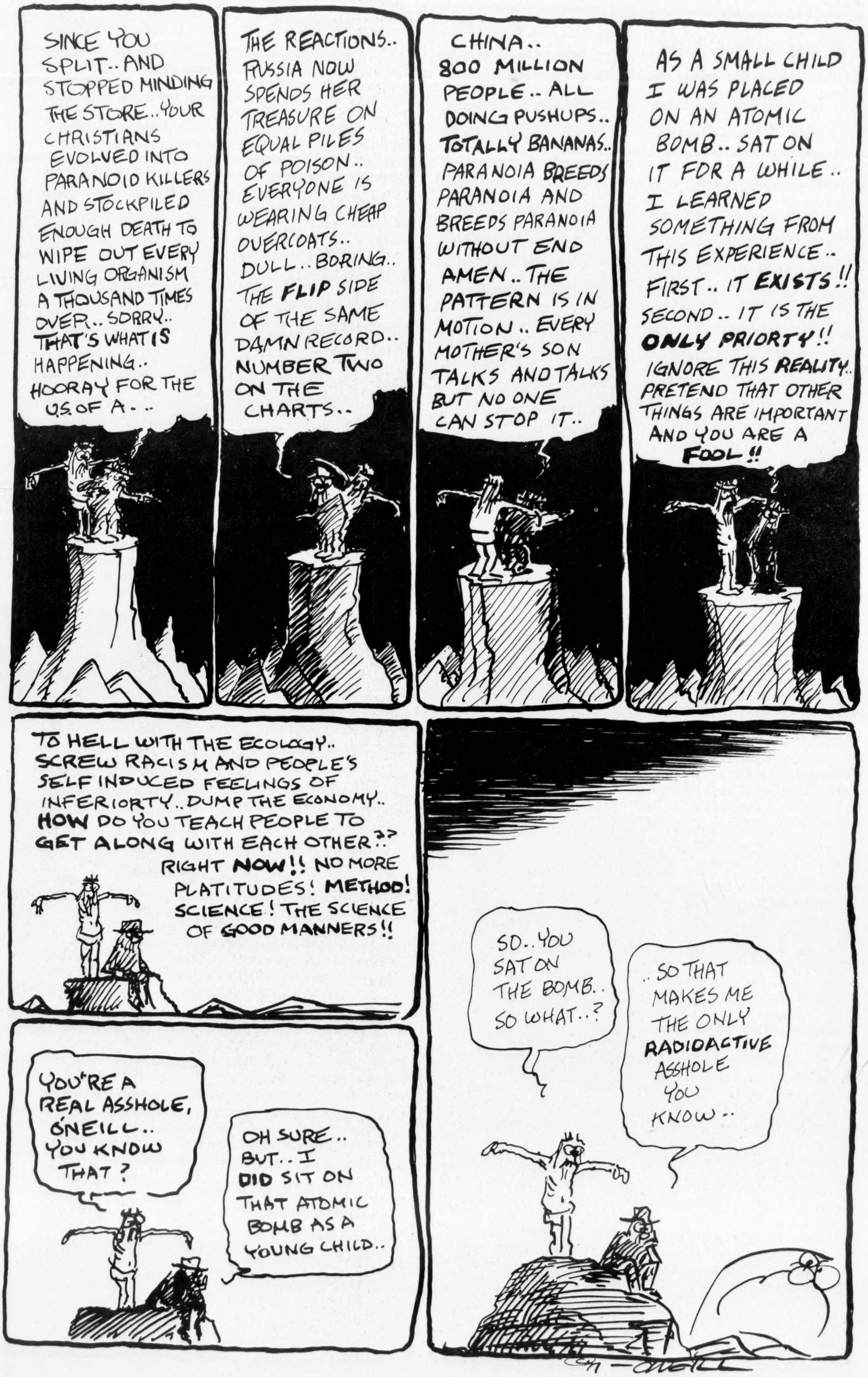
In fact I thought the day a complete success. The town cats and I. I have suggested that next year the Junior Chamber provide us farmers with an Easter dinner of ham. After all, hogs fly about as well as turkeys. ■


Something HAPPENED in SOUTH DAKOKA
COMICS AND STORIES
YEP.. TURKEYS RAINED FROM THE SKY IN SOUTH DAKOTA.. IS THIS MERELY FUNNY..? OR IS THIS PERHAPS SOMETHING ELSE!
DIDN'T WE JUST WITNESS..
THE DROPPING OF THE 1ST TURKOMIC BOMB ?
THE SACRED COW-PERSONS FLYING SQUAD
IF YOU THOUGHT THE ATOMIC AGE WAS OVER AND THE TURKOMIC AGE HAD BEGUN.. WOULDN'T YOU WANT TO BE ON THE GROUND FLOOR.. IF YOU HAD A FRIEND WITH A PLANE AND ANOTHER FRIEND WITH A BIG UGLY TURKEY..
WOULDN'T YOU WANT TO FLY OUT SOME SUNDAY AND DROP THE KLUTZ
..DOWN SOME OBNOXIOUS BASTARD'S CHIMNEY WHO YOU HAVE DECIDED AFTER YEARS OF CONSIDERATION THAT THIS FOOL WILL NOT LEARN AND THEREFORE MUST BE EXPOSED TO HIS NEIGHBORS AND THUS NEUTRALIZED SO AS TO PRESENT NO FURTHER THREAT TO THE REPUBLIC..?
I KNOW I WOULD..


DAN O'NEILL'S COMICS AND STORIES
..FROM A HOLE IN THE GROUND THEY DON'T KNOW!! TALK! ALL TALK! NO ACTION!!
BE HAPPY IN YOUR WORK.. BLESSED ART THOU WHO DOST NOT BITCH..
AND YOU.. YOU BLOODY BASTARD.. HANGING UP THERE.. SECURE IN YOUR SACRIFICE.. LORDING IT OVER US... I CAN TRACE EVERY MISTAKE MADE BY THE HUMAN RACE IN THE LAST 2000 YEARS TO YOUR TEACHINGS..
BAD PRESS AGENTS!! NOT MY FAULT!! COME ON.. BE FAIR!!


..I TOLD THEM TO LOVE ONE ANOTHER.. IT'S MY FAULT THEY WON'T!!?
YOU HIRED THEM.. THEY BOUGHT YOUR ETERNAL LIFE INSURANCE POLICY.. YOU PAY THE PREMIUMS.. YOU BE RESPONSIBLE!!
WHAT THE HELL GOOD IS IT TO SAY "LOVE ONE ANOTHER" AND THEN NOT SHOW PEOPLE HOW OR WHY? YOU CALL YOURSELF A TEACHER? IT IS TO LAUGH!! HAHO!!
I DON'T HAVE TO SUBMIT TO THIS! I'M GOD!
I CAN BLAST HIM WITH LIGHTNING!
BLAST AWAY! CHEAP MAGIC TRICKS WON'T IMPROVE YOUR POSITION.. YOU'LL STILL BE A COPOUT!!
FATHER FORGIVE HIM HE KNOWS NOT WHAT HE SAYS!! FAITH HOPE AND CHARITY THE GREATEST OF THESE IS CHARITY!!!
WHEW!! I CONTROLLED MYSELF..
..JUST IN TIME.. I ALMOST LET GO A TEN MEGATON BOLT THERE.. HEY? HEY!!
WHAT!
NO!!
YEP.. IT'S TIME TO TAKE YOU OFF YOUR LITTLE PERCH.. GET YOU DOWN HERE WITH THE REST OF US..


DECRUCIFIED?
AGGHHHHHHHHH
UNKKHH!!
AND ABOUT TIME, TOO!!
I'LL COVER YOU WITH BOILS!! GIANT SLIMY TOADS WILL FOLLOW YOU EVERY WHERE!! TOADS THAT BITE!!
YOU GONNA GET UP FROM THAT CROSS OR DO I KICK YOU IN BOTH EARS.?
I'M UP.. NOW WHAT..?
..AND A BIT STIFF I NOTICE..
ANYWAY.. THE AGENDA..
..A SHORT WALK TO A HIGH PEAK TO VIEW THE MESS WE'RE IN..THANKS TO YOUR LOUSY PRESS AGENTS..


SINCE YOU SPLIT.. AND STOPPED MINDING THE STORE.. YOUR CHRISTIANS EVOLVED INTO PARANOID KILLERS AND STOCKPILED ENOUGH DEATH TO WIPE OUT EVERY LIVING ORGANISM A THOUSAND TIMES OVER.. SORRY.. **THAT'S WHAT IS** HAPPENING.. HOORAY FOR THE U.S. OF A...
THE REACTIONS.. RUSSIA NOW SPENDS HER TREASURE ON EQUAL PILES OF POISON.. EVERYONE IS WEARING CHEAP OVERCOATS.. DULL.. BORING.. THE **FLIP** SIDE OF THE SAME DAMN RECORD.. **NUMBER TWO** ON THE CHARTS..
CHINA.. **800 MILLION** PEOPLE.. ALL DOING PUSHUPS.. **TOTALLY** BANANAS.. PARANOIA BREEDS PARANOIA AND BREEDS PARANOIA WITHOUT END **AMEN**.. THE **PATTERN** IS IN MOTION.. EVERY MOTHER'S SON TALKS AND TALKS BUT NO ONE CAN STOP IT..
AS A SMALL CHILD I WAS PLACED ON AN ATOMIC BOMB.. SAT ON IT FOR A WHILE.. I LEARNED SOMETHING FROM THIS EXPERIENCE.. FIRST.. IT **EXISTS**!! SECOND.. IT IS THE **ONLY PRIORTY**!! IGNORE THIS **REALITY**.. PRETEND THAT OTHER THINGS ARE IMPORTANT AND YOU ARE A **FOOL**!!
TO HELL WITH THE ECOLOGY.. SCREW RACISM AND PEOPLE'S SELF INDUCED FEELINGS OF INFERIORTY.. DUMP THE ECONOMY.. **HOW** DO YOU TEACH PEOPLE TO **GET ALONG** WITH EACH OTHER?? RIGHT **NOW**!! NO MORE PLATITUDES! **METHOD**! **SCIENCE**! THE SCIENCE OF **GOOD MANNERS**!!
YOU'RE A REAL ASSHOLE, O'NEILL.. YOU KNOW THAT?
OH SURE.. BUT.. I **DID** SIT ON THAT ATOMIC BOMB AS A YOUNG CHILD..
SO.. YOU SAT ON THE BOMB.. SO WHAT..?
..SO THAT MAKES ME THE ONLY **RADIOACTIVE** ASSHOLE YOU KNOW..
©71 – ONEILL

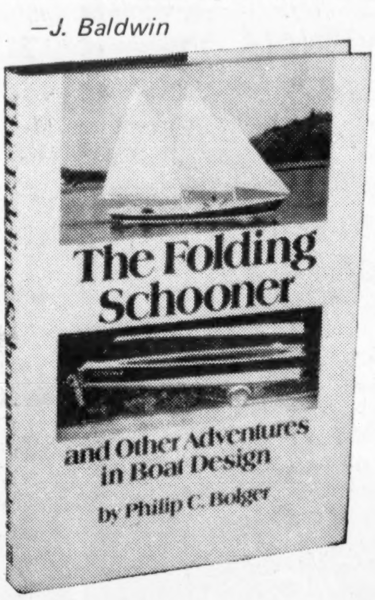
Nomadics

The Folding Schooner and Other Adventures in Boat Design

This is Boat Thinking at its best. Mr. Bolger is a fine and friendly teacher and he really did build a folding schooner. There's a lot more here than boat design too; anyone into making things can learn a lot. Lots of plans, including houseboats, tiny sailboats, and even an ocean-crossing rowboat.

—J. Baldwin

The Folding Schooner and Other Adventures in Boat Design
Philip C. Bolger
1976; 198 pp.
$13.50 postpaid
from:
International Marine
Publishing Co.
21 Elm St.
Camden, ME 04843
or Whole Earth



Proposed Rules for Gloucester Schooner Class

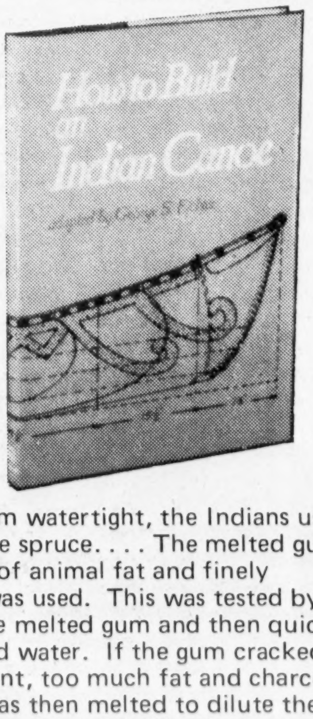
1. Boats are to be capable of being stored inside a space not more than 15′ 8″ long, by 5′ 2″ wide, by 4′ 4″ high, with no component projecting.
2. Boats, including all components, must be capable of being transported by a highway trailer, and launched from the trailer on any ramp in common use for trailer boats of any type without special equipment or help from noncrew-members. Races may be required to start from a fully-stowed position on the trailer and clear of the water whenever demanded by any contestant.
3. No component incapable of being separated from the rest shall weigh more than 150 pounds.
4. Boats may be required to demonstrate a capability of being righted and bailed by their crews after being completely swamped, including being re-rigged if the rig must be demounted in righting.
5. Boats protested for inadequate structural strength shall be tested by one kick from the bare toes of the protester at a point of his own choosing, any resulting damage to be the penalty of the protestee for the excessive lightness.
6. If any contestant is detected using his engine, all other contestants may use theirs.

How to Build an Indian Canoe

If you think you need a birchbark canoe, here's how to make one. The instructions are claimed to be absolutely authentic as to method and material. Based on information from the Smithsonian, they are backed by drawings and paintings of the step-by-step construction details and finished products. A number of styles are shown including some very large craft (36 ft!) and their histories are given too. Boatmaking is a skill that it might pay to have in the back room of your mind just in case.

—J. Baldwin

How to Build an Indian Canoe
George S. Fichter
1977; 90 pp.
$7.95 postpaid
from:
David McKay Inc.
750 Third Ave.
New York, NY 10017
or Whole Earth



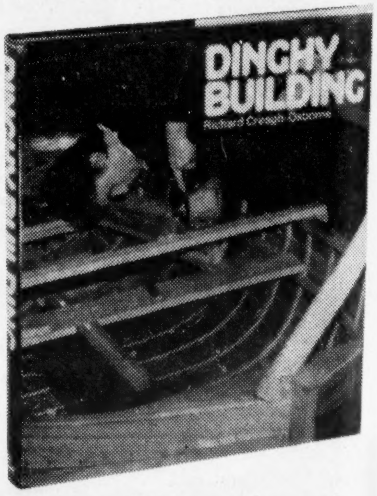
For sealing seams to make them watertight, the Indians used gum either from black or white spruce. . . . The melted gum was tempered by adding a bit of animal fat and finely powdered charcoal before it was used. This was tested by dipping a strip of bark into the melted gum and then quickly putting the coated bark in cold water. If the gum cracked when the piece of bark was bent, too much fat and charcoal had been added. More gum was then melted to dilute the mixture. If the gum did not crack, the piece of bark was held in the hand until it was completely cool and then was rubbed with the hand. If the gum was still tacky, or if it rolled off the strip, more tempering was needed.

Dinghy Building

Big boats tend to be a "hole in the water into which you pour money," but a good small one is one of life's purest joys. Most small-boatbuilding books guide you through making an ultra-simple craft that pays for the simple construction with compromised handling qualities. This manual is the next step up: dinghy building as an art. It is assumed that you already know how to use tools, and that you are smart enough to know what's good. Lots of techniques, both old and new, are illustrated, but the chapters that I found most interesting concerned "cold molding" which is hand molding a boat from custom made "plywood"; several layers of thin wood applied a strip at a time. Dinghys (and canoes, by the way) made this way have the look of wood with the smooth one pieceness of plastic, and are super strong and lightweight. Yum! This one for sure joins my boatbuilding bookshelf.

—J. Baldwin

Dinghy Building
Richard Creagh-Osborne
1963, 1977; 240 pp.
$15.00 postpaid
from:
John de Graff Inc.
Clinton Corners, NY 12514
or Whole Earth



There is not a great deal of steaming needed in any form of small-boat building nowadays, but you may require steamed elm ribs in a dinghy, or you may find a difficult chine or stringer which will not bend into place any other way. Floors which used to be steamed are now laminated, and you can deal with many tricky problem curves by this method.

The simplest steaming equipment consists of a suitable length of drainpipe blocked at one end and propped at an angle over any convenient source of heat. A little water in the bottom of the pipe sufficient for the purpose is allowed to boil gently. The lengths of timber are pushed into the pipe with string attached if they are short. Cover the open end of the pipe with a rag and wait.

Dinghy ribs up to say 3/4 in. X 1/2 in. will probably be ready in about fifteen minutes, but a chine about an inch square may need an hour. Give plenty of time, since it is not easy to reinsert a half-bent piece of timber.

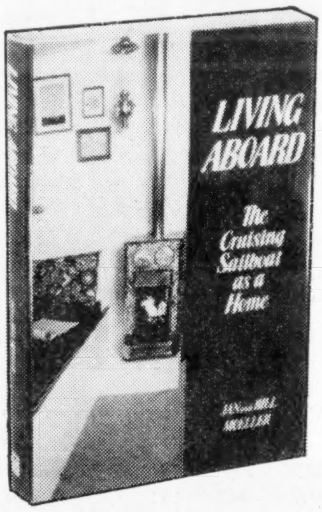
When you judge that the timber is well cooked, it must be taken out of the pipe and bent into position with the absolute minimum of delay. For this reason place the pipe as near the work as possible and have enough help to enable rapid and certain bending. You will probably also need gloves to handle the hot timber. If the timber breaks then the cooking time has not been long enough.

Living Aboard

If you want to keep your simplicity voluntary, there's nothing like a small mobile home on a large mobile environment to enforce it. This is a dense practical guide to boat living, the best of its kind.

—SB

Living Aboard
(The Cruising Sailboat
as a Home)
Jan & Bill Moeller
1976; 299 pp.
$12.50 postpaid
from:
International Marine
Publishing Co.
21 Elm Street
Camden, ME 04843
or Whole Earth



One of the best ways to save money is to try to avoid buying supplies and equipment in marine stores. There is much you can't get anywhere else, but there is more that you can. Stove alcohol is a good example. When we were new liveaboards, we asked the price of a gallon in a general hardware store that also handled a few marine supplies. The clerk consulted a list and said, "Marine alcohol is $4 a gallon." We asked him if he had any alcohol that was not designated "marine." He said he had several brands. We chose the least expensive of all, which was then $2 a gallon. The label listed its many uses, one of which was stove fuel. In all the years we had an alcohol stove, we never used "marine" alcohol and we never had any problems. Neither will you, if the label on the alcohol you buy lists stove fuel as one of its uses.

•

All our bulkheads are painted with interior latex, which not only is much cheaper than marine paint but also will not harbor mildew, since latex paint "breathes." It also dries in an hour, which is one of our main reasons for using it. Living aboard in a small area is no place to apply paint that takes many hours to dry, unless you can go off and live somewhere else while it is drying.

•

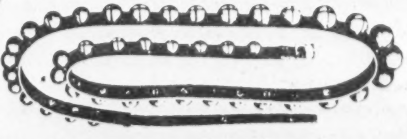
On a long ocean passage, it is not feasible or sensible to use any kind of electrically operated toilet. The old-fashioned head that requires manual labor to pump sewage overboard is best for a number of reasons. With a simple adaptation, this model also can function as an emergency bilge pump. (Get a plumber's helper of the ball type. Take the handle off. Cut a hole in the bottom of the socket that held the handle. Attach a hose to the hole. The hose must be long enough to reach the bilge. Insert the ball in the bowl of the head in the normal manner and pump.)

Coulter Carriage Supply

This catalog of makin's for carriage building and restoration looks like it is about 100 years old. But it has an order blank in the back with prices and information about ordering from your BankAmericard, so it must be real. They make whole carriages too. Nothing is said about horse exhaust. . .

—J. Baldwin

Coulter Carriage Supply
Catalog
$1.00 postpaid
from:
Coulter Carriage Supply
P.O. Box 276
Cokedale, CO 81032



SLEIGH BELLS — $22.50 ea.

The Complete Fisherman's Catalog

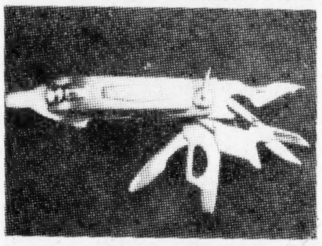
This is an easily understood guide to quality sport fishing equipment and is the best book on the subject we have read. It covers the history of the equipment being discussed including how and why it evolved. In doing this, it covers the rich history of fishing as an art.

It does have a touch of the snobbishness similar to that experienced in some gourmet cookbooks. And though we rarely can afford the quality of equipment described, it is enjoyable to understand the hows and whys of such gear, while being rewarded by the excellent philosophical discourse woven between descriptions. For the nonfisherpeople, reading this will bring a clearer understanding of why people have and will always enjoy fishing as a hobby.

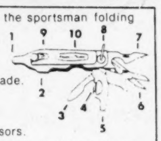
—Tyler H. Johnson and
Huey D. Johnson

The Complete Fisherman's Catalog
(A Source Book of Information about Tackle and Accessories for Fly Fishing, Spinning, Bait Casting, Surf Casting, Ice Fishing, Offshore Fishing and more)
Harmon Henkin
1977; 463 pp.
$7.95 postpaid
from:
J.B. Lippincott Co.
East Washington Square
Philadelphia, PA 19105
or Whole Earth

WALTON'S THUMB



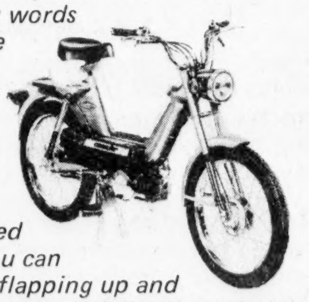
Listed below are some of the sportsman folding knife features:



1. Long pincher nose
2. Clipper.
3. Cold forged knife blade.
4. Split ring opener.
5. Screwdriver.
6. Self sharpening scissors.
7. Stiletto or hook eye cleaner and knot picker.
8. Lanyard ring.
9. Knot tag crimper.
10. Split shot opener.

Walton's Thumb, produced by Colorado's Hank Roberts, is enough to send the confirmed gadgeteer over the edge. Expensive and well-made, the Thumb is to the old angler's clipper what the atomic bomb is to the firecracker. Made from stainless steel and surprisingly light, it has blades that include a tiny pincer pliers, side-positioned clipper, small knife blade, split ring opener, split shot remover, scissors, reel-sized screwdriver, hook eye cleaner, knot tag crimper and bottle opener. The parts are replaceable and it is guaranteed. Really swell. Get one for Christmas.

Mopeds



A number of people have sent me Moped brochures lately, so I'd better say a few words about 'em. There are many people who use Mopeds and like them. I don't. It seems to me that for all but heavy loads on hilly terrain, a good bicycle will do. The bicycle attitude seems healthier to me; do we have to motorize everything? Some say that a Moped is at its best in the rain because you can keep a lot drier if your legs aren't flapping up and down. This may be true, but I consider it folly to mix any two wheeler with traffic in slippery weather. Mopeds don't mix with traffic very well anyway; they're too slow. You're always being hounded from behind. On the other hand, they're legal on bike trails, and in that case they are much too fast for the bicycles. (About 10 mph faster.) Yet the Moped's 25 mph speed is far from slow and safe if you hit something or lose control. Even in a car, a 25 mph hit can be lethal. (Actually pedalling a Moped is strictly for Godzilla.) My opinion, based on many miles on both Moped and motorcycle is that there are few things a Moped can do that a good small motorcycle (not scooter) can't do safer, sturdier, and with a wider range of usefulness. By small motorcycle, I mean a top speed of at least 60 mph. Personally, I vote for a good small car with a bicycle ready in the trunk.

—J. Baldwin

Orienteering

The word means finding your way with map and compass; a good thing to know how to do. Sharpening your skill permits confident "bushwhacking" away from the increasingly crowded trails. Some people make a contest of it, which is a good way to gain skill while giving you a good excuse for wandering around outdoors. Some make a race of it as a true test. This book is mainly aimed at the racers and is intended to promote orienteering as a sport. My problem is that I can never remember where I left my compass. The authors don't mention what to do about that, but they cover about everything else.

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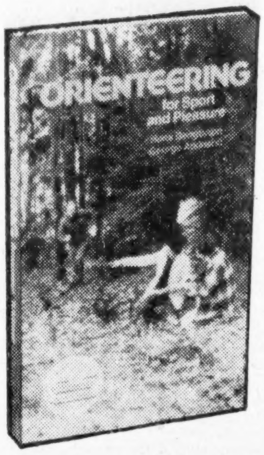

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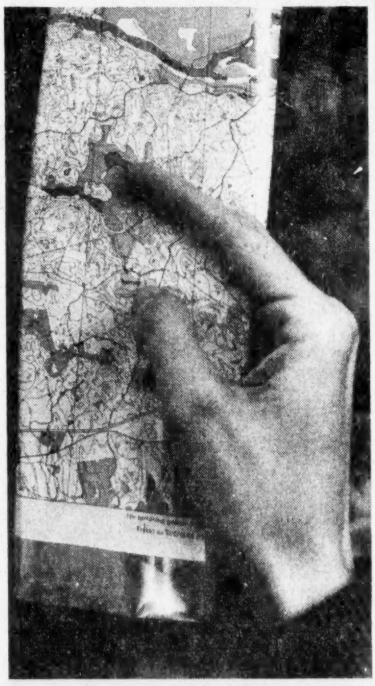

This flexible map case also enables you to use the popular and time-saving technique called "thumbing." This is the technique of folding and holding the map so you can use your thumb as a continual pointer to your then current location. *As you move over the land, your thumb moves (with you) over the map.* In this way, every time you look at the map you can fast-focus on your current position instead of having to search over the entire map area. Thumbing not only saves time during a race but also eliminates most chances of parallel errors, i.e., mixing up two adjacent (or nearly so) areas with basically the same main features.

With this technique and some practice you should be able to become quite proficient at running and map reading simultaneously.

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Gore-Tex

While the Polarguarders and Downies have been fighting it out, another option has appeared that may settle the question. It's called Gore-Tex. It's a special fabric originally intended for use as artificial blood vessels. Laminated to more conventional cloth, it permits vapor to pass, but not liquid or wind. That makes it ideal for making down equipment that is virtually waterproof, which is what we've been waiting for, right? And at last we have a raincoat that keeps you dry while preventing a sweat-bath. That's something nobody has ever been able to do before with either traditional or modern materials. We are fortunate that Gore-Tex is being fashioned into garments and other items by people of high skill and integrity. That makes the price easier to bear. As my stuff wears out, this is probably what will replace it. These catalogs have a chapter on how Gore-Tex works, if you're curious.

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Catalog

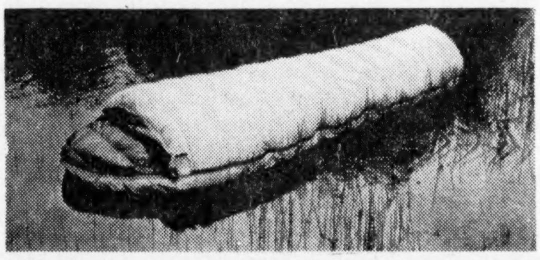
$1.00 postpaid

from:
Marmot Mountain Works Ltd.
P.O. Box 2433-MO
Grand Junction, CO 81501

Synergy Works [EPILOG, p. 660] Catalog

Free

from:
Synergy Works
255 4th St., Suite W
Oakland, CA 94607



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Diesel Rabbit

A number of folks have asked me to comment on the Rabbit Diesel, so here goes. At first glance, this car would seem to be a very good one. It rides and handles remarkably well, is stable, roomy, fast, and economical beyond reproach. A closer look reveals some features that are not very "Volks," for instance the ground clearance empty is less than five inches, but all in all it's nice. Adding a Diesel engine makes it even nicer by eliminating the obnoxious smog equipment, the ignition system, and a host of other reprehensible underhood junk. BUT. . . previous Rabbits have earned a well-deserved reputation for poor quality, unreliability, expensive repairs, and parts procurement difficulties. (This isn't just my opinion; virtually all the reputable car magazines and consumer testing services agree). I have other qualms too. The Rabbit Diesel engine is made up mostly of parts from the gasoline engine version instead of being heavy duty to withstand the added stresses of diesel operation. This might prove to be OK, but the gas engine is not noted for being bulletproof. And there are a lot of details that worry me: a radiator partly made of plastic; very expensive shock absorbers that are not particularly long-lived and can't be replaced easily by the owner without special tools; lots of crappy plastic parts that have proven to fail early, etc. In short, I think that VW has gone from making the almost unbelievably stupid beetle design out of good stuff, to making the outstandingly intelligent Rabbit design sloppily. Of course that's still better than many other manufacturers who continue to make stupid designs sloppily, but I think you can do better with your new car money. Too bad, because this machine is so close. In any case, I'd lie in wait for at least a year before pouncing.

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[more →]

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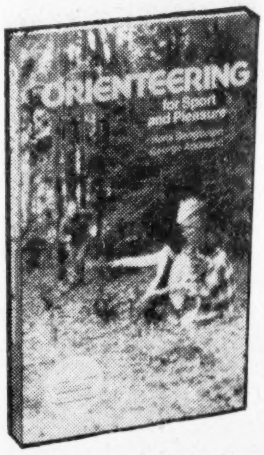

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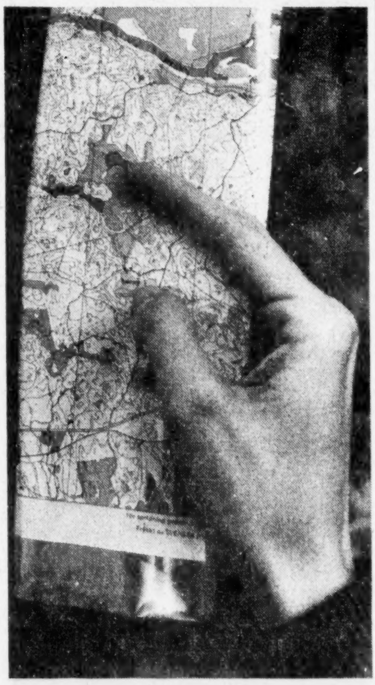

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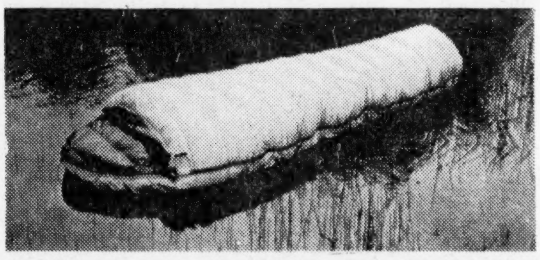

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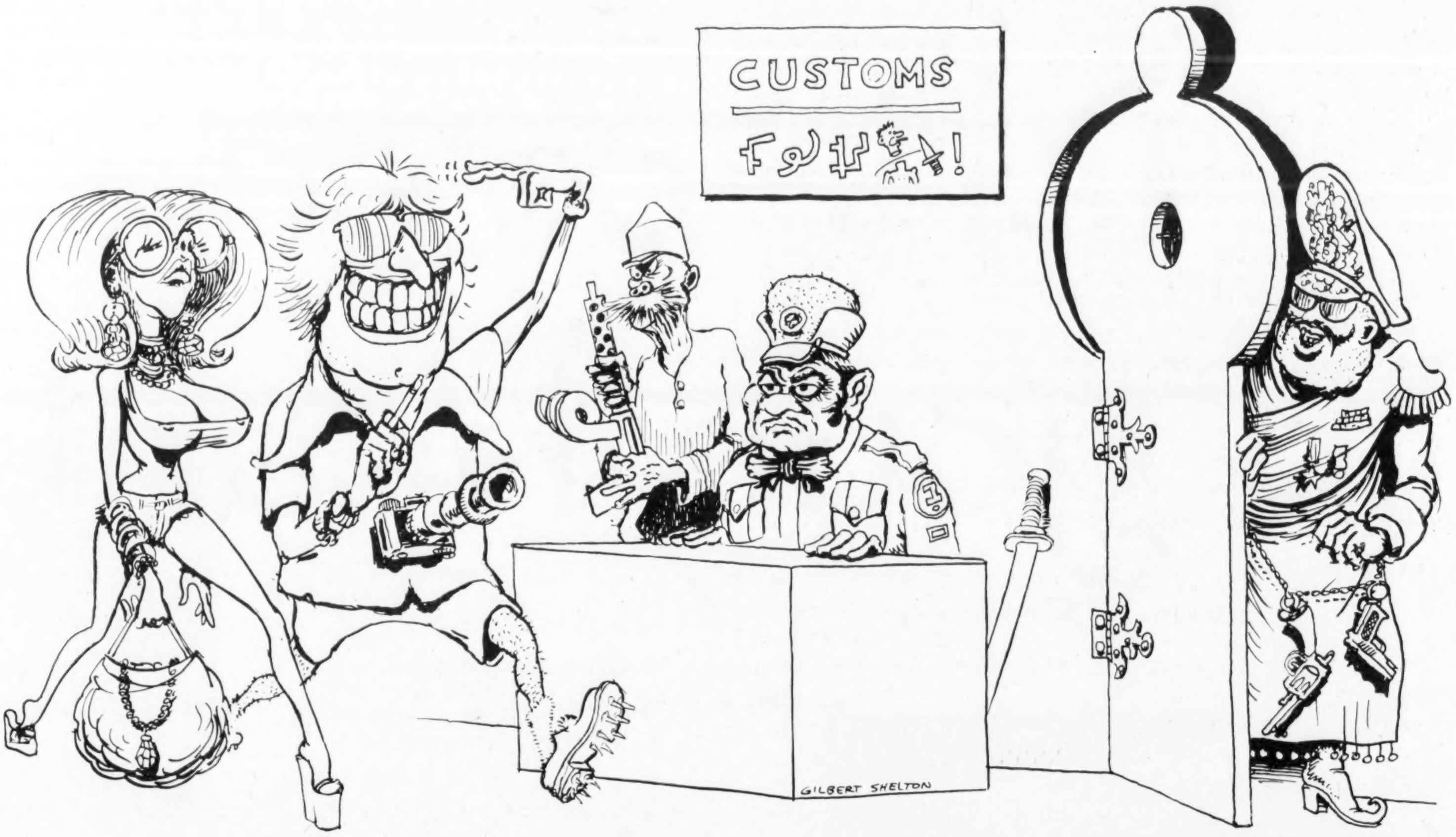


"Yeah, well, where is he taking us?"

"Who cares, we're past the. . . ."

"Pass here, sir. See? No illumination. Very obscure. At your disposition. Regulate your film. All is well I shut the port. Goodday sir."

"Waihnt! Dunh gong awahnh!"

"ALL IS WELL SIR. REGULATE IT. Yoar hoosban luffs peekchurs to taik, eh madam?"

"Oh yes. Loves to. But you see. . . ."

"Aing cahng faing dah doarhn, goahn dahn inh! Fuhng!"

"You zo beeotiful, lak a zooparstair. Yoar hoosban veree locky."

"Oh, thank you, but . . . Oh my God, what's that!"

"Awhnh! Suhnhfabinghgingh muhngha funghah! Awhn!"

"Ah, eez veree diffkuld, yoar kamra. Wot peekchurs you taiking?"

"FRANK! ARE YOU ALRIGHT?"

"Nohn! Aing fehl ovahng ah gohn dahn mungah funghahng chahrn, ahn aing cahng faing dah doarhn!"

"You lak ower countree? Taik menee peekchurs?"

"Look, my hoos – my husband wants out, get it? Husband out. Open up. Husband hurt."

"Yes. You bat. I see. Obin oop, kamra not march. Hoosban very outrage. OK. You lak haff coffee now?"

"Lehmeehoudh!"

"No, no, really. He wants out."

"LehmeeOUDH!"

"Yoar hoosban want limonad, eh? Fonny personage! Come wiss mee, thees way, madam beeotifool."

"No, no, really. Look this is just. . . ."

"No worree. Ahmed! Look, my friend, the hairy gringo is in there playing with his camera. If he comes out, tell him I have taken this succulent creature to the cafe. Thees mon arrange hoosban. Aiverything in world good now. Come come."

"LEMEEOUDH OPH EARHNH!"

"Right, boss. Don't hurry. She's a hot infidel fig and no question. Have some for me."

"Camel. WE BRANG YOAR LIMONAD, SIR. GOODBY!"

"Seet heer, so beeotifool. I exploain ower countree. Two coffees, Fernando, and don't diddle around."

"What have you got there, you old donkey? Some one like that, those legs, she needs a real man."

"Shut up, ordure, and serve. Your balls would fall off if she winked at you. Wot a beeotifool reeng. I see?"

"Look, hoosban . . . now wait. . . ."

"Yoar han veree soff. Lak fedders, chikee fedders."

"You are very kind, and also a very obnoxious creep. We must go back now. Understand? Back. Hoosban want out. Back."

"Back? Opnokus? Ah! Yoar back veree soff also. Beeotifool. Hoosban want limonad? Fernando! Send the kid out to customs with a bottle of lemonade for her dung of a husband. With God's permission, piss in it first. OK, all arrange. Yoar han beeotifool, back beeotifool, all ober beeotifool. Oh, heer is coffee! Toast yoar back he, heh heh!"

"Listen, hoosban no want limonad, want out. You veree – Oh sweet Jesus!"

"He busted out, boss. The burro fell over and cracked his stupid head."

"Real great, lover. Real great. They slap me in solitary and you sit here letting this creep paw you. Fabulous vacation."

"Now just one minute, Frank . . . my God, you're bleeding."

"Very gross republic you possess, honcho, very gross police republic. You just wait, you fat bastard, the ambassador of the United States of America. . . ."

"Attend, attend, my old one! We are not at this moment at your house and I accept not your swears. They. . . ."

"Kiss my. . . ."

"Here's your bottle of piss, Donkey. Looks like you better drink it yourself."

"What do we do now, boss?"

"In the name of the prophet's holy fingerbowl, lay off! And fetch the chief of security. With great ecstasy, my dear friend, I kiss the hand of your married, in disregard of your unwise paroles. Here's for the coffees and you can shove the lemonade. Now, my dear friend, we shall arrange the visit to the medical service. Seat yourself here, and take my mouthwipe to assist yourself."

"Thanks just a big heap. Sorry to disturb the little head to head. Maybe I'll bleed to death and you can continue your latin romance."

"Oh for the love of God, Frank!"

"Perhaps you may wish to retract yourselves to the cabinets of messers and dames, as I have already fetched he whom here we call the one with the long hand."

"What in hell is he talking about? And where did lunkhead go?"

"You're asking me, Mr. Master Interpreter? Little of the lingo and zongo, right through?"

"By the bath of Fatima, what is this?"

"Dad said to serve everybody a bottle of lemonade and tell you it was quite a job, but he managed to fill them all himself."

"You little dork of the jackal. . . ."

"Judas Priest. Lunkhead's brought the general. Now we are in for it."

"Nice work, Frank."

"What fuck goes on here. Hi buddy, American friends, hi bebs. Three years American base Air Force Liaison hot shit. I fix 'em. Security Chief. No problem, Jake. At ease. Just what is going on, ordure? Yes I see she – they don't talk God's tongue do they? – has bosoms like honeydews. Who hit him?"

"May I beg your pardon, most excellent officer? This madman fell down descending from the train – it is a great likelihood that he was drunk as a pig, is it not so Ahmed? – and apparently he blames his mishap on his majesty's most divine guided democracy. He mentions the American ambassador, and though, like all these hippies, he has the appearance of a spastic camel, he may be the president's cousin, for all one knows. I therefore thought it the greatest sageness to summon your excellence to administer this affair."

"I don't know what he's telling you, sir, but you seem to speak American – "

"Let's not exaggerate."

"– just like an American, my wife agrees, and I'd like to register a complaint about the way this man –"

"No problem, Jake. What fuck. At ease. What does the oaf want? Has he been through inspection? Kief? Then get rid of him before he bleeds all over Fernando's tablecloth. Clean him up Ahmed and get a taxi. Lord defend us, they are infants, and we who have fought bravely against the red jaguar are reduced to being wet nurses."

"True, excellent boss, true."

"Shut up and get the taxi. OK buddy, hi bebs. I fix 'em. No problem. My brother first class number one hotel hot shit. Good deal. You beautiful dame, I kiss the hand, m-m-m-m. Any questions, ask the boss. OK buddy, this way. My brother number one. Smoke good shit. Cheap. Pool and bar. OK? Blast off. By by."

"But the bags – hey!"

"No problem, Jake. This guy, big bastard, zero head, arrange everything. Stuff at the base airport. No problem. Blast off. Hollywood. What fuck. By by."

"Wait, goddam it! The luggage. . . ."

"Take 'em to my brother's. They ought to be good for double fare."

"By by, my dear old one!"

"By by, Honeydews. Always I am left over in your heart!"

"Hoowhee. Some ordure. So. Back to affairs. As his divine majesty says, no room in the joss house for a tractor."

"True, excellency. Your manipulation is the most sage."

"It was nothing. She was a hot fig, though, wasn't she?" wasn't she?"

"So true. The red hottest."

"Alright, Kasif. Blast off."

"Wot fock, excellency. No problim." ■

Communications

Computer Hobbyist Publications

by Marc Le Brun

As readers of this section are by now no doubt aware, the recent rapid development of low cost microcomputer systems has spawned an explosively growing computer hobbyist community, complete with its own literature. The following is a listing of some major publications serving this particular subculture. These magazines vary greatly in terms of content, quality and treatment, even within a single issue, reflecting the essential funky "homebrew" character of their constituency. Therefore it is fairly difficult to give a concise summary of their individual properties. The notes below are intended to serve only as an initial guide.

People's Computer Company and **Creative Computing** are among the oldest of this genre, with **PCC** being senior by several years. When they began publication microcomputers did not yet exist except as science fiction. Timesharing with minicomputers was the focal interest. Since timesharing is an essentially public activity it is not unusual that both these publications have tended to be somewhat institutionally oriented, in particular towards the educational user.

Dr. Dobb's Journal and **Computer Music Journal** are both published by People's Computer Company. **DDJ** contains concentrated technical information (along with the usual quota of news, gossip, etc.), and often publishes complete listings of substantial software systems. **CMJ** is a new, very solid journal specifically devoted to the musical applications of digital technology.

Byte was the first of micro-era magazines and began with a strong initial momentum. **Byte** is probably the most widely read magazine in this collection. Being first, it introduced a number of essential departures from the style of the older magazines, in particular more professional (and expensive) production and artwork. However it is important to remember that this is a new field and a slick production in no way guarantees high quality contents.

After a number of months the editorship of **Byte** divided, creating **Kilobaud**. It is a little difficult to pin down the exact difference in style between the two magazines but it seems that **Kilobaud** is the more technically oriented of the pair.

The Southern California Computer Society (SCCS), a large homebrew computer user group, began a publication which

Byte
$1.50 /copy
$12.00 /year
(12 issues)
from:
Byte
70 Main St.
Peterborough, NH 03458

Kilobaud
$2.00 /copy
$15.00 /year
(12 issues)
from:
Kilobaud
1001001 Inc.
Peterborough, NH 03458

Interface Age
$1.50 /copy
$10.00 /year
(12 issues)
from:
McPheters Wolfe & Jones
13913 Artesia Blvd.
Cerritos, CA 90701

SCCS Interface
$1.50 /copy
$15.00 /year
(12 issues, includes SCCS membership fee)
from:
SCCS
P.O. Box 5429
Santa Monica, CA 90405

People's Computer Company
$1.00 /copy
$4.00 /year
(6 issues)
from:
PCC
P.O. Box E
Menlo Park, CA 94025

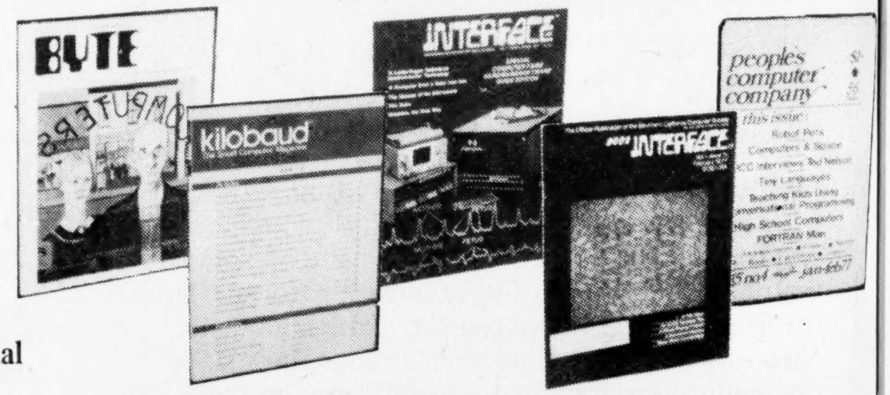
Dr. Dobb's Journal
$1.50 /copy
$12.00 /year
(10 issues)
from:
DDJ
P.O. Box E
Menlo Park, CA 94025

Computer Music Journal
$2.75 /copy
$14.00 /year
(6 issues)
from:
CMJ
P.O. Box E
Menlo Park, CA 94025

Personal Computing
$2.00 /copy
$8.00 /year
(6 issues)
from:
Personal Computing
167 Corey Rd.
Brookline, MA 02146

Creative Computing
$1.50 /copy
$8.00 /year
(6 issues)
from:
Creative Computing
P.O. Box 789-M
Morristown, NJ 07960

ROM
$2.00 /copy
$15.00 /year
(12 issues)
from:
ROM Publications
Route 97
Hampton, CT 06247



When you write a language in the language you're writing, that's bootstrapping. It's like the person who wants to get out of a hole but has no toehold. He reaches down, grabs his own bootstraps and tugs up mightily. And, in the worlds of six-dollar-bionic people or computers, he extricates himself from his predicament. Such behavior is quite acceptable in universes where Newton's third law doesn't apply.

—*Personal Computing*

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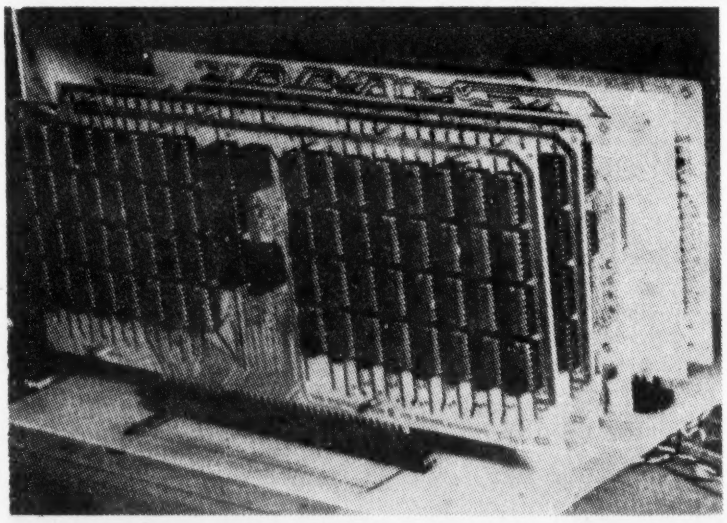


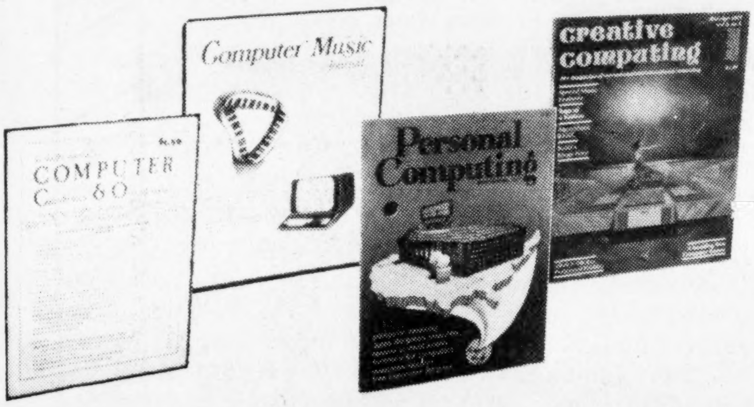
A view of Steve's assembled Digital Group System. [When a party from the **BYTE** *office stopped by at Steve's basement laboratory in Connecticut on the way back from Atlantic City last fall, we found his system up and running as pictured here, with his older Scelbi 8B computer acting as a slave peripheral processor to control the vector graphics output device described on page 78 of the November 1976* **BYTE.** *Steve cooked an excellent Quiche Lorraine for dinner that night while Dan Fylstra and I explored a game of KINGDOM running in Tiny BASIC.]*

has since split into **SCCS Interface** and **Interface Age**. The first of the pair retains the homebrew orientation as the SCCS house organ while the second has a more popular and commercial orientation. As with **Byte** and **Kilobaud** the two forms of **Interface** are completely independent.

Personal Computing is oriented towards the personal use of computers as opposed to being oriented towards the microcomputers themselves. It has recently become more technically rounded out by the absorption and incorporation of another magazine called **Microtrek**.

ROM is a yet-to-be-published magazine with an interesting editorial staff which includes Joseph Weizenbaum (author of **Computer Power and Human Reason**) and Ted Nelson (author of **Computer Lib/Dream Machines**).

There are a number of other items which are more or less oriented towards the computer hobbyist but this collection should certainly provide a more than sufficient initial entry into the literature. And the determination as to which of these packets of technical wizardry, funk, wonder and flakeyness is most appropriate must ultimately, of course, be left as an exercise for the reader. ■



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A few months ago the State Department announced the sale to China of computers "designed for peaceful purposes." Regardless of whether computers should be sold to China, the State Department's announcement is nonsense. *Any* digital computer can be programmed to do *anything* another computer can. There is no way of building a computer for peaceful purposes only, any more than one can design a gun useful only for defense.

—*Personal Computing*

Periodical Guide for Computerists 1976

This booklet provides a detailed index by category for most of the hobbyist publications listed in this section which appeared in 1976. Besides articles, editorials, book reviews and even letters are cataloged. Also included are some of the "mainstream" computer publications such as **Digital Design** *and a number of the ham radio mags such as '73 as well. A nice feature is that letters of correction appear in the listing immediately after the entry for the corrected (or commented upon) article. For those who do not feel quite ready to subscribe to the twenty odd available publications this guide could provide another level of detailed information. It is of course also extremely useful as a global index to the literature.*

—*Marc Le Brun*

Periodical Guide for
Computerists 1976

1976; 20 pp.
$2.50 postpaid

from:
E. Berg Publications
1360 S.W. 199th Ct.
Aloha, OR 97005

Electronics Revolution

Readers of CQ, *we gather, have a deeper than usual interest in the future. If that's true, I commend to your attention a fascinating special issue of* Science *magazine about the rapidly evolving technology of communication and control — electronics. There's no question in my mind that the most fundamental (and least debated or even discussed) changes in our lives will come from the Electronics Revolution — more than from politics, war, economics, medicine, space industrialization, or voluntary simplicity. In electronic theory and practice the Earth is developing the planetary equivalent of frontal lobes.*

—*SB*

Science
18 March, 1977
Vol. 195, No. 4283
$3.00 for single back issue

from:
Science
1515 Massachusetts Ave. NW
Washington, D.C. 20005

The rise of the "computer hobby shop" will probably provide the strongest force to date for developing a first generation of individuals who feel comfortable with computers, who are not afraid of them, and who will exercise in the computer arena that famous American "basement creativity" that has boded so well for us as a nation in the past. The computer hobby shop is not a new phenomenon for those of us who were at least of teen age at the end of World War II. In the early to mid-1950's, military electronic surplus stores sprang up in cities like toadstools. Some stores even sold surplus or secondhand electronic components by weight.

From this superb collection of electronics — the product of hundreds of millions of dollars of government and industry R & D — amateurs learned to build oscilloscopes, electronic repair equipment, and amazing electronic gadgets. The electronics surplus stores in the 1950's bred the generation of engineers that was able to conceive and advance the computer technologies, the TV technologies, the satellite technologies, and the space technologies of the 1950's, 1960's, and the 1970's.

The computer hobby shop of the 1970's and probably the 1980's is today's counterpart of that older electronics surplus store. In these stores, you can buy teletype machines, modems, acoustic couplers, older versions of electronic display screens, adder circuits, bits and pieces of computers, and all kinds of microprocessors and large-scale integrated chips.

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Developments in control theory.

Date	Development
1868	Maxwell read his paper, "On Governors," the first analytic study of the flyball governor.
1922	Minorsky wrote the differential equations describing automatic ship-steering gear and used it to design a system on the *New Mexico*.
1932	Nyquist presented his basic regeneration theory, which established him as the father of feedback control technology.
1934	Hazen published the theory of servomechanisms, a term which he coined.
1936	Callender, Porter, and Hartree published an early study of transient performance of a valve-controlled process.
1938	Philbrick developed the electronic analog computer at the Foxboro Company.
1953	Mason introduced the signal-flow diagram techniques.
1956	Boltyanskii, Gamkrelidze, and Pontryagin introduced generalized optimization synthesis techniques for dynamic systems.
1958	Kalman and Bertram pointed out the utility of state-space representation of the dynamics of control systems.
1961	Kalman and Bucy presented a new approach to filtering and prediction for linear systems.

HUNGER IN NEW YORK CITY

Hunger crawls into you
from somewhere out of your muscles
or the concrete or the land
or the wind pushing you.

It comes to you, asking
for food, words, wisdom, young memories
of places you ate at, drank cold spring water,
or held somebody's hand,
or home of the gentle, slow dances,
the songs, the strong gods, the world
you know.

That is, hunger searches you out.
It always asks you,
How are you, son? Where are you?
Have you eaten well?
Have you done what you as a person
of our people is supposed to do?

And the concrete of this city,
the oily wind, the blazing windows,
the shrieks of automation cannot,
truly cannot, answer for that hunger
although I have hungered,
truthfully and honestly, for them
to feed myself with.

So I sang to myself quietly:
I am feeding myself
with the humble presence
of all around me;
I am feeding myself
with your soul, my mother earth;
make me cool and humble.
Bless me.

HAWK

Hawk
sweeps
clear through
the background
which is sky
and mountain ledge.
– Old Chuska Mountain,
my friend, shelter –
His immense knowledge
of wind,
his perception
of circling slow wind,
his edge of wing
on air trail

straightens then suddenly
overhead,
directly above us,
the pines.

This man, he knows
what he is doing.

BUZZARD

Climbing suddenly
out of a ravine,
we saw a black buzzard
working at carrion.
The air was rancid,
not much wind,
and the dust was hot
and still, like the day.

Quietly now, pull
the breath back
into the body.

Sky is very endless
and dry; no clouds.

The buzzard doesn't see
us as it pokes
upon the animal wreckage,
rags of skin and entrails,
poor bones, claws.

Suddenly, the wind shifts,
air changes, and dust
sweeps to the bird,
and it looks toward us,
suddenly fearful, the briefest
recognition in its eyes,

and then with a great clatter
of wings, it rushes
away, a torn entrail sodden
with rot falls behind it
into the dust.

Breath is let out,
and the hot wind reeks again.

I've heard an older man say, "They take the eyes first." I wonder why? I think it must have to do with ritual, some distinct memory consistent with the history of its preceding generations. And the buzzard pays ritual homage to the memory of its line, the tradition that insures that things will continue. Yes, that must be what it is. Eyes have a quality of regenerating visions which must continue first and last of all.

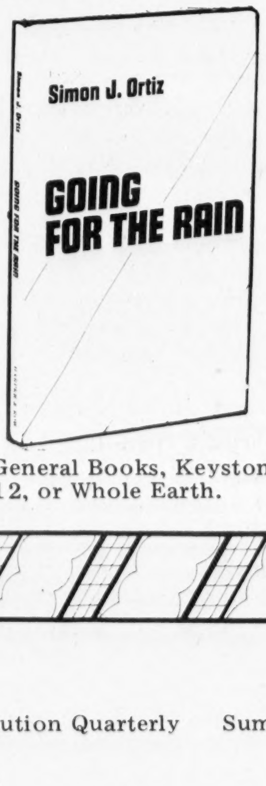
MORNING STAR

The space before dawn
holds morning star
in its true eye,
the center of all places
looking out
and always in,

the mountain shale
of still deep night
is all light
yet undiscovered,
solid and single,
a glacier without motion
until the gleam
of eternal orbits
shall be complete
and be alive,

for the morning star
finds that dawn
on its journey
through our single being,
the all that has depth
and completeness,
the single eye
through which we see
and are seen.

BY
SIMON ORTIZ



1976, $2.50 from Harper & Row General Books, Keystone Industrial Park, Scranton, PA 18512, or Whole Earth.

The Poem Is That Voice in Between

ACOMA POET SIMON ORTIZ TALKING WITH LEWIS MCADAMS

Lewis McAdams: Have you ever worked with musicians?

Simon Ortiz: No, I never have. I have wanted to . . . At home we used to dance a lot. When I was a boy, and before I knew anything about anything outside the community, the Acoma community, the community where I lived at, McCarty's, New Mexico, with my family, we used to dance. My father would sing for us – Deer dances and Buffalo songs, just at home with my sisters and brothers.

McAdams: In the house?

Ortiz: Yeah. Just kind of an after dinner thing before we went to bed, my father would sing, and we would dance.

McAdams: What would he sing? Do you still know those songs?

Ortiz: Oh, all kinds of songs.

McAdams: What's a deer song?

Ortiz: It's kind of a hunting song, but it's for dancing too. You know, songs and dancing are one and the same thing. I can't really picture a song without the motion of the dance in it. Like there's this one song, if I can remember it, that goes,

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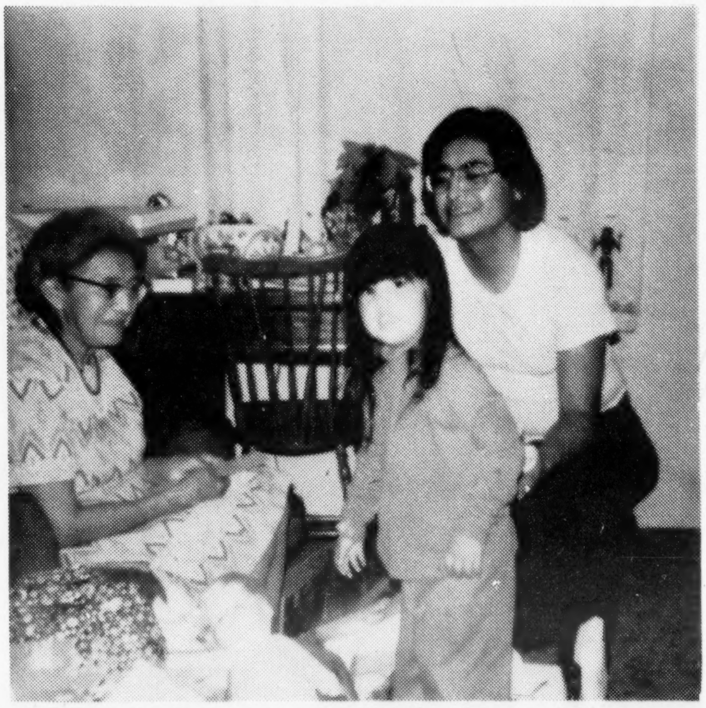
Simon Ortiz (b. 1941) started life in the Indian Hospital in Albuquerque, New Mexico to Acoma parents. He grew up in McCarty's (70 miles west of Albuquerque) on the Acoma Reservation. There was no high school on the reservation. Simon went away to St. Catherine's Boarding School in Santa Fe but returned to public high school in Grants where he graduated. After graduating he worked in mines and grain mills and briefly attended Ft. Lewis College in Durango, Colorado. 1963: Already knowing he wanted to be a writer, he left college for the Army. ("If I was gonna deal with America, then it was going to be head on.") Out in 1966, he bummed around the country "sort of looking for a job but not really." In 1967, he returned to the University of New Mexico and studied with William Eastlake and Gene Frumkin. In 1968, Paul Engle invited Ortiz to attend the International Writing Program at Iowa City. After a year, back to the southwest where Ortiz ran a newspaper – **The Rough Rock News** *– at the Navajo-run Rough Rock Demonstration School.* **Ortiz:** Up to the age of nine, they instructed primarily in Navajo. After, it's about half and half. As compared to the way I went to school and the way a lot of children still are introduced to school – where they may speak Indian in their home – and then suddenly, one day in August, bam, you know, you go right into school and you're expected to respond to "What's your name little boy?" and you don't know what the hell they're talking about. So it was a good part of my education that I spent a year at Rough Rock.

In 1970, Simon was awarded a National Endowment of the Arts grant. **Ortiz:** I went to look for Indians, because, well, Indians during all my previous education experience were pretty much a myth. They were a vanishing race. There were no more real Indians, anywhere, it was said, except those that were in books, preserved in books, or in museums, and most of those books, most of those sources said, this is what Indians used to look like, hunted buffalo, or lived in pueblos that were 4 - 5 stories high, and who were the Indian of yesteryear. So when I got that grant, I decided I would go see if, because even though I had known that sure, of course there's Indian people, I grew up with them, I'm one of them, this mythology of the vanished Indian, was very very heavy and was always in the back of my mind, and so I wanted to go and look for them, and just prove to myself. And so I did, I traveled throughout the south, the southeast, all up into the northeast, and just various places, through the various states, small towns, cities, looking for Indians. Drive into a place and ask, "Are there any Indians here?" And people usually looked, remember this was in 1970, this was dangerous times, you know, anti-Vietnam, and the demonstrations, Kent State . . . I wore my hair about this long. *Right now he is teaching in the ethnic studies department at the College of Marin near San Francisco and living with his wife, Roxanne Dunbar-Ortiz, who teaches American Indian History at the University of California, Hayward. They have a son, Raho Nez and a daughter, Rainy Day.*

–Lewis McAdams



Simon Ortiz with his mother and his daughter. Photo by Roxanne Dunbar-Ortiz.

Weyow haiyo
Inniyo hai-i-yo
Inniyo o haiyo ho ho
Yo ho weyow haiyo
Ae hayo hi yo
Weyoh hai yo.

McAdams: Those aren't words?

Ortiz: No, those aren't words at all, that's just kind of like a chant, like a moving chant, a chant to dance to, to move to. I don't think the words are really important. It expresses a kind of a great joy or celebration you have about your life. Of course, other hunting songs have words in them. The specific hunting-prayer songs. For example another one that we would do, and this has to do with the oral literature that I grew up in, this hunting song goes:

Sthawah maiyaani Muukqairra
shayaikah
Duwaahsteh dumahsteh Dyaani
guyuu o dzehmah ah.
Waayu huunah waah yuhuunai ah.

I can remember my Mama and my older sisters – the whole family sitting around the wood stove. She would sing. My father would be gone hunting. They mostly were hunting season songs, but they can be used actually for other occasions.

McAdams: What did that hunting song say?

Ortiz:

My hunting spirit friend,
Mountain Lion,
In this direction turn the
Deer towards me.
Waayu huunah waah yuhuunai ah.

That's just one verse of it. You see, there are certain hunting animals that are in partnership with you. The hunting Lion, the Mountain Lion, the Eagle, the Hawk.

McAdams: You're saying you can use the songs for other things. What do the hunting songs mean in your own life as it is in the city?

Ortiz: Well, sometimes I sing the songs just when I'm running. It just helps you keep the rhythm, for one thing. And to provide, I think, a kind of structure that is somewhat symbolic and spiritual. To help include you in whatever you're doing. It's not actually to get something, but to be included in it, within the process of your life. So I sing when I'm running sometimes.

McAdams: Do you ever see hawks where you live now, in San Francisco?

Ortiz: Once in a while we get out towards where there's more country. There are quite a lot of hawks here. *Shpiyai* is what their name is. *Shpiyai.* You just feel like naming it. It's important to name in terms of recognizing something and then to sing something for it. If you know a particular song, you sing it.

McAdams: Do you think that the animal can hear it?

Ortiz: Probably. At least, I think it will realize some sort of relationship with you. Whether it hears it really physicially. It realizes the same spirit that you have with it. And I think this is really important, both for it and for yourself. Because you as a person are complementary to that non-human life, that animal life, that non-self, nonselfness. It's complementary to you as a self, self as an entity. And I think song, especially, is an indication of this. I know that some of the songs that are sung, for example the Corn Dance Songs, speak about this. One song goes, "What is it that we are dancing for?/What is it that we are singing for?" And then the motion is, "The sky" or "The Allness of Things."

McAdams: How do you mean the motion, you mean like the gesture?

Ortiz: Yeah, it's a gesture. "Why is it that we are singing/ Why is it that we are dancing./ It is because. . . ." The song doesn't say "because" but it's indicated in the motion of arm, hand, and body: "Because of the nature of all things around us."

The Acoma Corn Dance in the late 1800s. Photo by Ben Wittick from Pueblo Mountain, Village, Dance, *a beautiful book ($19.95, 1972, 1975. Viking, New York)*

McAdams: What do you think is the difference between that and poetry? I mean it seems like there are prayers that are poetry too.

Ortiz: I don't think that there's any difference in one sense, where poetry is complementary to that part of life which doesn't have a voice, where poetry is giving a voice to what's out there. The song is one way that the poem gives voice to that which is voiceless. Not because those other things don't have voices, it has to do with a relationship that you have with things, that the Voice or the Song or the Poem is that voice in between. The Poem is complementary to that which is outside and away from you. Then you together have that single voice. I guess there are poems that don't consider this at all, poems that are individualistic and isolated, but I think that is what song is. And poetry, which is expressed after this very basic quality, is like that – original song.

McAdams: Was it hard for you to move out of the structure of your community into the structure of America when you were a kid?

Ortiz: I think it's hard for everybody who comes from a very close-knit community. But I didn't immediately realize what impact the moving out had for me. And I don't think that even now I realize all of it. Sure it has impact. The first time I ever really moved out in the sense of leaving that community was when I was in the 7th grade – 13 years old. I had to go away to boarding school in Santa Fe.

McAdams: What were the hassels?

Ortiz: Mainly adjustment problems with a new environment. When you're living at home in the Acoma society, you're pretty close to the family, to the extended kinship family, where you're not only just a member of your own family, but you're in a family with your aunts, your uncles, your cousins, who are your brothers and sisters. You're protected. Then suddenly you're put into boarding school with a lot of strangers from all different tribes. These were mostly Pueblo kids, but from all different Pueblo tribes at St. Catherine's Indian School. And then you were put under the guardianship of the nuns and the teachers there, and there all these Catholic rules and regulations, the regular Catholic boarding school trip.

McAdams: Had your parents gone to Catholic school?

Ortiz: They had gone to St. Catherine's back around 1915-1920. That was one of the reasons that I ended up there. My mother went through the 8th grade there, so she spent a lot of her American education there. My father was always kind of a rebel type, and he constantly ran away from school, and was in trouble with the school authorities. He didn't finish school there. I think he moved on to another school – Albuquerque Indian School, and then Grant's . . . he had pretty much of a history like I did.

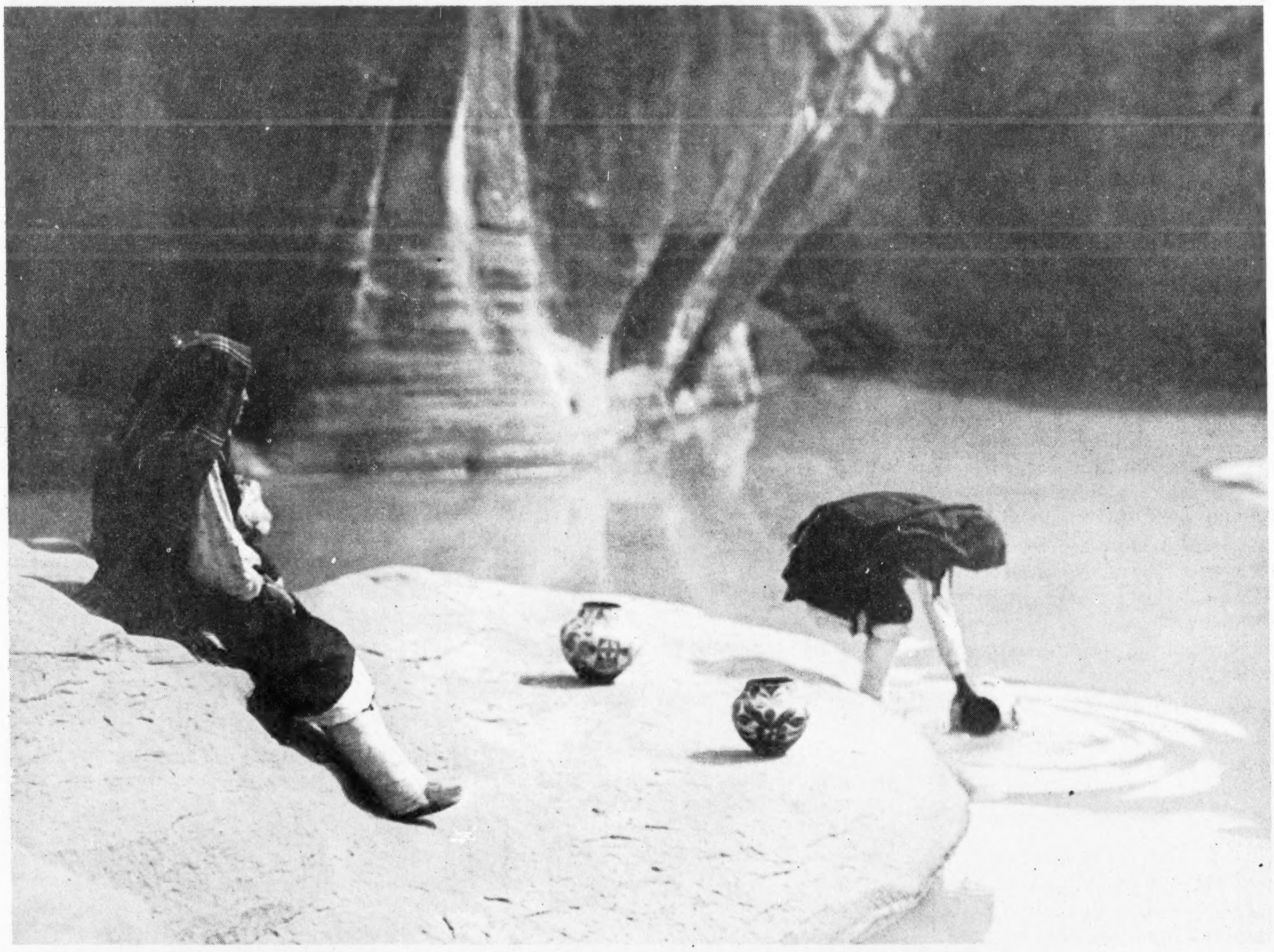
McAdams: Your father became a leader, an elder of Acoma, right? And learned to do, or never forgot how to do, the things to make him that? Did you ever talk to him about how he managed to hold on to – or gain – the knowledge that the schools were trying to take away from him?

Ortiz: Well, he did. He has the position now because of his clan membership, because of the traditional system, the way that it's set up. He's a member of the Antelope People, *Kuutse Hano*. He's one of the elders now, and he's got a very awesome responsibility ensuring that the people's religion, tradition, culture, and social system survives. The structure of the Acoma system enables him to do that. He couldn't have totally remembered everything, I guess, not being kept within the system, but he managed to almost by sheer will power – because he wasn't home for quite a long time. He was like many other Indian people. He was away to school, and then when he was no longer in school he worked around. He worked for the railroad for a long time in Arizona and California, but later on he retired from the railroad and moved back home. When I talked with him about this he said, "For a long time in my life I did not know, nor did I accept much of the responsibility for this role, for this leadership role that I have. But I had to because of our traditional system." He has no choice, really. If he wanted to become a complete man in the Acoma way, he had to accept this role. So it was very hard for him, because there were years and years when he had no consistent contact with his own teachers, the elders, during the time when he would have been learning. He's already close to 70 and not too long ago he said, "I know that my memory isn't that good anymore, but I'm trying to live in a way where I'm still learning. I know there are some things," he said, "that I will probably not learn, but whatever I learn I will try to teach to others." His role of course is teacher to the younger people. Especially younger people who are in that line of descent, the Antelope People's children, who will eventually take over where my father leaves off. So it's very hard for him. The American system has really decimated a lot of the Indian life system. The People, the solid community was effectively broken up one way or the other. My father talks about the period of 1918-1924, when it must have been a particularly dark time for the people. There was a very bad epidemic of influenza during the period after World War I. People were just dying off. And this was in the era of official federal policy to totally prohibit Indian religious practice; so for Indian people there at that time, it was very sad, very dark. The people came close to dying.

Acoma Pueblo

McAdams: What's your role in continuing the life of The People?

Ortiz: My role, I think, as a member of The People, is essentially like that of my father, as a teacher. Clanwise, I'm a member of the Eagle Clan, *Dyaami Hano*; the Eagle Clan doesn't have the same kind of responsibility that my father's clan has. He has to be a leader. Our clan doesn't have that responsibility. But as a person, because I'm an Acoma I have to be responsible for other people, not only for myself, but in terms of the whole of the people, of the *Hano*, and as an uncle to my sister's children specifically. A teacher by example, by model, providing leadership within our



The old well of Acoma, photographed in the early 1900s by Edward S. Curtis.

immediate family. I think that I'm like my father in carrying out this responsibility. It's pretty difficult, especially since I'm playing kind of a larger role outside the immediate Acoma community, as a writer, as a teacher of other people than Acoma people. I think everybody has a difficult time living in American society, not having much of a breathing space socially, trying to live without compromising your integrity.

McAdams: When did you start to think about being a writer in the context of being an Acoma man, of wanting to tell the stories of Acoma. I remember once you said that when you started out you wanted to be like Hemingway.

Ortiz: Well, let's see, I said I began to think like a Hemingway, after I had begun to read a lot, you know, probably my junior year in high school. But even before that, you see, the story teller is more or less a traditional role, and it's usually the uncle. I said that I was the uncle to my sister's children. The uncles that I knew in my growing up days were always pretty good story tellers. My mother would talk about our uncle Clay, who was a good story teller. He would tell the history of the people, or funny things that had happened to him. So I had that model, I guess, in the traditional way. It had nothing to do with writing. My mother says that I used to make up stories when I was a boy. She says that I had a lively imagination and that I would make up stories to explain why I was in some place where I wasn't supposed to be, I suppose. And I had those models of the older person, usually the uncle, who is very close to you, to the children. Sometimes even more important than the immediate parents. The uncle is your guide, you know. He's the one who's going to help you guide yourself through your life.

My father, who's a pretty good story teller, used to like to sing to us, not only just the traditional Acoma songs, but songs that he had picked up along the way, songs from Woody Guthrie, and Leadbelly, and Jimmy Rogers, and those folks – things that he had learned probably in school or wandering around in the 1930s. That had a big impact on me, especially as a teenager. I began to write down lyrics, after this fashion, make up songs. This was before I had any inclinations about being a Hemingway. That came not too long afterwards, when I was in high school. In a society like Acoma, where you're dealing with a totally oral transmission of history, of religion, philosophy, the total culture of the people, story-telling is the only way. My older sister is a good story teller. And one of my uncles is a really good story teller. They make a story out of just a little incident. Both of my parents are really good – probably my mother is better than my father. When I went to boarding school, I kept a diary of some sort, a secret diary that I would hide away at the bottom of my trunk.

McAdams: When did you first think of writing poetry?

Ortiz: Probably in high school when I began to read, people like Shakespeare or William Blake, who I really liked, and Carl Sandburg, Robert Frost. Story tellers like Edgar Allan Poe, Hamlin Garland – do you know his work?

McAdams: No.

Ortiz: He was a Midwest kind of realist. Of course I didn't figure that out till much later. It just occurred to me that my parents gave us a very good education in terms of literature, American and world literature. My mother used to like to read Pearl Buck, **Shangri-La** by Hilton, folk tales from the Brothers Grimm. **The Golden Bough**, my father read to us out of that. There were a couple of other books, but in terms of literature other than Acoma, those were several that really helped kind of inspire me, inspired us. We didn't have very many books around the house, but once we went to school we could always check books out.

Then later on in the late 50's when the beatniks were blossomming, here in San Francisco and elsewhere, I read Ginsberg, of course, and that really turned me on. This was exciting, furiously exciting. Ginsberg, some Ferlinghetti, Snyder, probably Roethke. Jack Kerouac with his stories of Neal Cassady. I guess that this was towards the latter end of my high school years. I find a lot of similarities between poets who grew up in the latter half of the 50s and early 60s, I guess who had the same influences.

McAdams: Yeah, it's really true. I know.

Ortiz: Even though I was a kid on a reservation.

McAdams: I was living in the suburbs of north Dallas, and reading the same things.

Ortiz: Of course TV was coming in, newspapers, and we weren't all that isolated, at least physically. And the teachers I had really allowed me a lot of leeway in terms of self-development, because I was – well, I don't think I was any more intelligent – but I was kind of aggressive, and I asked a lot of questions. My father had influenced me a lot about standing up for what I believed in. He was a pretty tough fighter most of his life.

McAdams: I'm wondering about warrior songs, and the definition of a warrior in 1850 versus the definition of a warrior in 1950. Do you think there was that sense at Acoma, of passing those old warrior songs on and turning them to use in the present?

Ortiz: The tradition of a warrior comes through a sense of crisis. And crisis is pretty much all the time, although it may not be extreme all the time; there are different levels of crisis. Warriors are not active all the time, but they're always there. It's part of the way that order is kept. So in times of crisis, in times of people being attacked, whether it's physical combat or something other than physical combat, the warriors are called into action. Some people are called to carry out this kind of role. In contemporary times, some tribes have really called out their warriors. They have found it the only recourse.

McAdams: Do you think that the warrior's song is an individual song as well as a communal song?

Ortiz: Within the Pueblo system there is nothing individualistic. It's all to be included within what the people are, for the *Hano*'s sake, for the people's being. There's really no individualism.

McAdams: Well, do you think of a poet as ultimately an individual role?

Ortiz: No, I still have to say, like my discussion a while ago about what a poem is, that it is complementary to whatever the source is, that the poet is complementary to whatever the source is, the source giving him the energy, the source providing him the substance or content, for what he is saying. So he can't really be individual, because he's not making the poem, the prayer, himself. He may have that facility, to make sounds, to be able to write things down, to be able to think them up, but the source has to be still the source. It still has to be that other part. The poet is only one part, and the other parts are necessary. So, is a poet an individual? In that sense, no. Like the song, "Why is it that we are singing the song? Why is it that we are dancing this dance? It is because of the other part."

McAdams: Are you a member of any definite political organization?

Ortiz: I'm politically active in terms of support, helping out. Leadership, I would have to acknowledge too, mainly because I'm a writer and people depend on me to acknowledge that responsibility. I just can't avoid it. I've found that the voice I provide gives expression to many Indian concerns, so I have to accept the responsibility of leadership. I can't really be just a writer, working at writing individualistically, especially when I say that the voice – that poetic voice or the song voice – is complementary to the source, the source being what is all around us, including the people. At present I'm working with the Survival School in Oakland. I teach Native American Studies courses at the College of Marin, and I'm working with the American Indian Treaty Council Information Center here in the city. We're publishing a newsletter called the Treaty Council News.

McAdams: When you think about the things that are basic to your vision of the world, what are those things, that sustain you?

Ortiz: The value that I have as an Acoma man, as a person, as a people, as a *Hano*. I cannot say that I am an Acoma man without also saying that there's a *Hano*, Acoma *Hano* – *Sthaiyudzeh* all the people, that is basic, the basic value that a person has. Once he is presented to the sun, and when he is given a name, and ceremoniously included into that body of the people, into the community; after that he must acknowledge that he is part of it because this is the way that the people will look at him. You have to be responsible to the whole community, because you are part of it. And if I fall away from that responsibility then it also means that I'm severing myself from being human. The greatest punishment in some tribes is for a person to be banned from the tribe. It's worse than being killed, to be driven away, to be driven out.

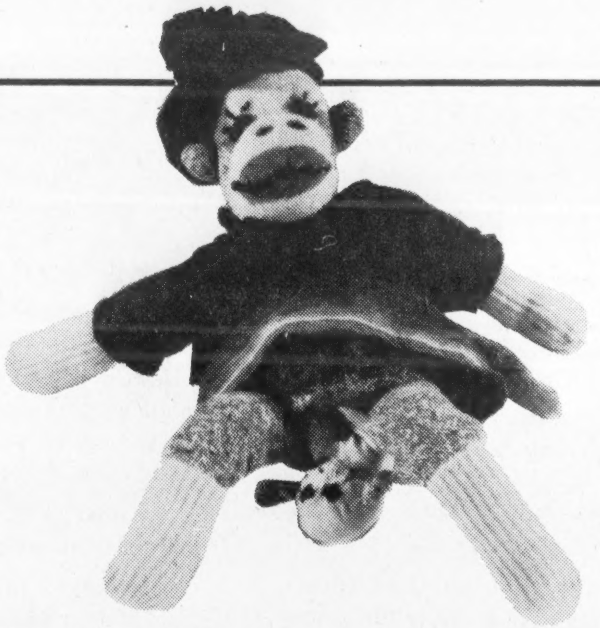
Part of my responsibility is explanation of this idea of having an Indian selfhood, and to give it a meaning that all too often it has not had to non-Indians. You know, Indian people have too often just been kind of exotic creatures, you know, romantic visages, or lurking savages, or beasts of the forests, that kind of image. People have not wanted to accept Indians as thinking, feeling, creative and substantial people.

McAdams: So, what is there to pass on to your children?

Ortiz: To pass on? The sense of self that I'm talking about. What is it that would be useful to them in terms of character, substance as a human person, caring and being responsible for others? In terms of tradition, those things which make it possible for them to know who they are, and to be able to find those things dependable, and to be able to find those traditions, or that culture, acceptable in terms of who they are. To be able to know their history. I know it's going to be very hard for them, because again there's going to be that removal and distance. But I think with the effort that myself and other Indian writers are making, in a way it's going to be easier for them, the younger people. Because we're at a stage where we are realizing, for ourselves, on our own terms, a sense of value. When I was in grade school, you know, I always thought, well, yeah, those people in the books are real Indians and I'm not a real Indian. But now, in terms of the developing creative literature, my children and oncoming generations will get a real sense of literature and a real sense of themselves as people. Not just the fact that there were Indians who lived long ago, or were on the verge of extinction, but that we are a real people now with a sense of reality which this literature reflects. That's what my responsibility as a writer, as a poet, is. ■

Learning

Monkey-Doll Birthing Toy



Dear friends,

A year ago I made my first monkey doll-birthing toy for a three year old whose mother was about to deliver her second child at home. The enthusiasm with which the toy was received by children and adults alike has encouraged me to share the idea with others. I have made up clear and simple directions for its construction that are available at the address below for $1.00 and a stamped self-addressed envelope. A finished doll costs $13 postpaid. Toy directions in case it is not self-evident . . . gently ease baby from mother's vagina, unsnap umbilical cord and afterbirth, and snap baby's mouth to mother's breast to nurse!

Jan Alovus (Ms.)
Blackberry Ridge Farm
Rt. 3 Box 153A
Celina, TN 38551

How to Make Old Time Radio Plays

I grew up on radio. Every afternoon before dinner I used to listen to Captain Midnight, Star King, Tom Mix, and Superman. Captain Midnight particularly fascinated me because of the airplane sounds, the sounds of people walking through caverns and underground passages and stumbling over rocks and falling down bottomless tunnels. My mind used to wander in two ways — with the characters into their stories and into the radio studio where all the magic was taking place. Radio is more flexible and inventive than TV or movies because with little money and some imagination you can travel in any world you care to. Recently this was brought back to me when I received a tape called How to Make Old Time Radio Plays. *Before listening to the tape I looked at the manual that was enclosed and was immediately drawn into creating my own sound studio. When I listened to the tape I discovered all the things needed to put on programs that sounded as impressive as those I remembered. All it takes is a tape recorder, water, sand, and other things that one can find in any kitchen or workshop. As an extra bonus the back of the tape consists of the following sound effects which draw you right into creating stories: light traffic; medium surf; war: shouts, machine guns, explosions; electronic sounds: radar, space adventures, etc.; jungle sounds; trains. . . .*

—Herb Kohl

How to Make Old Time Radio Plays
Tape and Manual
$6.95 postpaid

from:
Dead Pan Productions
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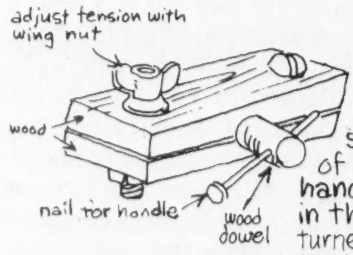
Some Manual Sound Effects.

Here are a few easy sounds to make yourself. You'll be able to invent many more.



CREAKS

make a 'creak box' from two pieces of wood bolted together. Drill a hole slightly smaller than a piece of dowel, as shown. Put a handle on the dowel, and insert in the hole. As the dowel is turned, it will bind against the block, making creaks.

STABBING

Drive a steak knife into a melon.

Exploratorium Cookbook

San Francisco boasts a unique, uh, well it isn't really a museum. . . . it's a place where all sorts of physical phenomena are demonstrated by means of working exhibits, many of them done as art pieces. The place is a delight and people return from time to time to see what's new. You tend to learn a lot there. They call it "an exuberant learning center." Anyway, like all good museums, they are reaching out into the community, believing that the more people get into this sort of thing, the better. The Cookbook is a manual for constructing 82 of their most popular exhibits. Critical dimensions are given, along with some of the essential detailing and suggestions for materials. The recipes assume a level of skill rather more than dumb-dumb (the level is indicated) and it looks to me that anyone with that skill could come up with a good exhibit working from the plans given. The Exploratorium also has available a number of "idea sheets" which are teaching aids covering many of the same subjects. There's an Exploratorium School too. Judging by the mob scene usually in progress in the Exploratorium people are getting a lot of Good Stuff there. You could get one going in your city. Drop by if you're in town.

—J. Baldwin

Exploratorium Cookbook
Raymond Bruman
$50.50 postpaid
$1.50 for individual recipes

All available at
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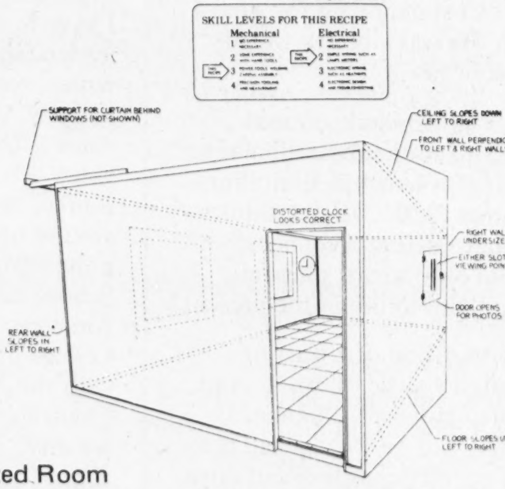
SKILL LEVELS FOR THIS RECIPE
Mechanical
Electrical
1
2
3
4
THIS RECIPE
SUPPORT FOR CURTAIN BEHIND WINDOWS (NOT SHOWN)
CEILING SLOPES DOWN LEFT TO RIGHT
FRONT WALL PERPENDICULAR TO LEFT & RIGHT WALLS
DISTORTED CLOCK LOOKS CORRECT
RIGHT WALL IS UNDERSIZED
EITHER SLOT IS VIEWING POINT
DOOR OPENS FOR PHOTOS
REAR WALL SLOPES IN LEFT TO RIGHT
FLOOR SLOPES UP LEFT TO RIGHT

Distorted Room

When a visitor looks into this room from the special vantage point, it appears to be an ordinary rectangular room. But a person walking around in the room appears to change size drastically. This happens because the shape of the room is actually far from rectangular. The righthand wall is significantly undersized, and the other features of the room taper uniformly from the full-sized wall on the left to the reduced one on the right.

Parabola

Underground rivers of juice flow in this new magazine of myth. The major players in the subject play here, with a graphic excitement never seen in academic publications.

—SB

Parabola
(Myth and the Quest for Meaning)
$3.50 /single copy
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from:
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166 E. 61 Street
New York, NY 10021

Stone face
Prayer stone
Infused, active, seeing,
"Dark to the mind,
Radiant to the heart."

•

Rite of Passage

Two of the pupils and friends of Minor White who shared with him the days of his final passage present a sequence of his own images to depict the process as they experienced it, with their accompanying text.

Campaigns

The fascinating world of military miniatures. There's a level of skill, art, and fanaticism here I never dreamed of.

—SB
[Suggested by Jodie Evans]

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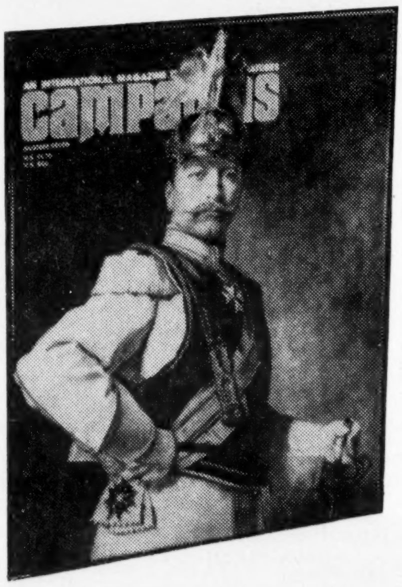
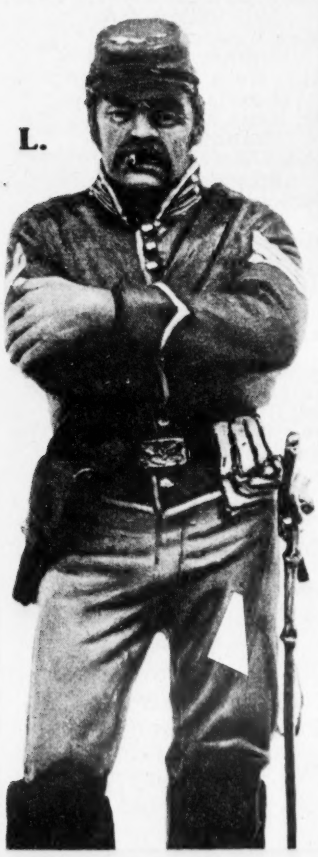


L.



L. An exciting new release from **Realmodel** *is a 90mm casting of a U.S. cavalry sergeant of 1865, sculpted by Bill Hearne. This lifelike figure is one of Hearne's outstanding efforts, seeming almost to breathe, and is the first of a series he is doing in this scale for Realmodel. A base, name plate, and painting instructions are included and while the guide describes a Union trooper, the figure will serve equally well as a Confederate cavalryman. Price in U.K. is £4.50 by mail, in U.S. $10.50 by surface mail, $12.50 by air, from Realmodel, 32 Thurloe Place, London SW7.*

Experiences in Visual Thinking

If you're a poor visualizer, you're working without one of the most important mental tools. Fortunately, visual thinking is an ability one can develop and improve, and Bob McKim has provided a manual for doing just that. The book is both informative — good background information on creativity and problem-solving — and experiential, full of excellent exercises structured to develop specific aspects of visual thinking. A fine balance of about and how to. It's one of the very few books with exercises to do that I've actually managed to work my way through.

—Linda Williams

Experiences in Visual Thinking
Robert H. McKim
1972; pp. 172
$10.95 postpaid

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10 Davis Drive
Belmont, CA 94002
or Whole Earth

2-12/pulleys[7]

In Figure 2-12, which way (a or b) will pulley "X" turn?

Did you trace the motions of the pulleys with your finger, or feel some sort of inner muscular involvement, as you came to the correct conclusion that pulley "X" goes in direction b? If so, you were experiencing the importance of kinesthetic imagery to active thinking operations.

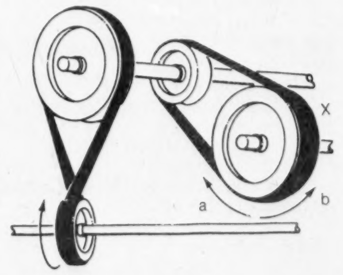

Figure 2-12.

Tower of pulp

With two sheets of newsprint and 24 inches of Scotch Tape, construct the tallest tower that you can in 30 minutes. You may cut, fold, or form these materials any way you like. Other challenges, using the same materials: the longest bridge, the largest enclosed volume (open or closed), or the strongest 12-inch-high support structure (add increments of weight to test).

•

"Have a big tree in front of you. / Breathe fire on the tree and burn it all up. / Have an old castle in front of you. / Breathe fire on the castle and have it fall down. / Have an ocean in front of you. / Breathe fire on the ocean and dry it up.

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Under the access of an item in The CQ *means you can mail order it from:*

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CoEvolution Quarterly — Summer '77 Financial Report

EXPENSES

	Feb.,Mar.,Apr. (Predicted)	Feb.,Mar.,Apr. (Actual)	May,Jun.,Jul. (Prediction)
Salaries and fees			
Office	$17,000.00	**$15,281.42**	$15,000.00
Production	5,130.00	**6,117.09**	6,500.00
Editors	11,450.00	**11,518.13**	12,000.00
Contributors	4,000.00	**4,465.00**	4,000.00
Office rental, materials, etc.	7,000.00	**8,768.79**	9,500.00
Phone	1,300.00	**1,497.68**	1,500.00
Promotion	7,410.00	**13,672.91**	13,900.00
Printing	15,500.00	**19,234.27**	16,500.00
	(36,000 copies)	(38,000 copies + 2,000 extra reprint of No. 12)	(45,000 copies)
Subscription process and mail	11,000.00	**9,165.88**	11,000.00
Shipping	1,165.00	**1,244.83**	1,400.00
Business reply	2,000.00	**850.00**	1,000.00
Refunds	225.00	**146.50**	200.00
Total	$83,180.00	**$91,962.50**	$92,500.00

INCOME

	Feb.,Mar.,Apr. (Predicted)	Feb.,Mar.,Apr. (Actual)	May,Jun.,Jul. (Prediction)
Subscriptions, gifts and renewals	$45,984.00	**$54,795.80**	$56,400.00
Retaining and Sustaining	3,000.00	**3,850.00**	3,500.00
Back issues	8,000.00	**7,437.92**	7,000.00
Distribution	10,380.00	**13,232.96**	11,500.00
Total	$67,364.00	**$79,316.68**	$78,400.00
NET PROFIT OR (LOSS)	($15,816.00)	**($12,645.82)**	($14,100.00)

Gossip

Highly flattering and generous assistance has come our way from Robert Rodale, head of the benign empire of Organic Gardening & Farming *and* Prevention *in Emmaus, Pennsylvania. At Bob's invitation* The CQ *has provided 30 pages of material for the August '77* OGF *— an unmatchable opportunity to show our wares to his 1.2 million readers. On top of that he paid us $3,000. This is a typical move by Rodale; I've heard it from others. The company manages to support things without colonizing them, and their magazine keeps getting better.*

The Citizens Against Toxic Sprays (C.A.T.S.) who wrote the devastating "Effects of Sublethal Exposure to 2,4,5-Trichlorophenoxy-Acetic Acid on Adult Male Homo Sapiens Open Field Behavior" in the Fall '76 CQ, *have had a victory in Oregon. On March 7, 1977, U.S. District Court Judge Otto Skopil handed down a decision against the U.S. Forest Service — "The judgement will permanently enjoin the defendants from applying 2,4,5-T or Silvex, or any herbicide mixture containing either of these herbicides, on or within the boundaries of the Siuslaw National Forest." The use of those herbicides has now been suspended in all nineteen national forests in Oregon and Washington. For a copy of the 60-page opinion, send $6 to C.A.T.S., 1385 Bailey Ave., Eugene, OR 97402.*

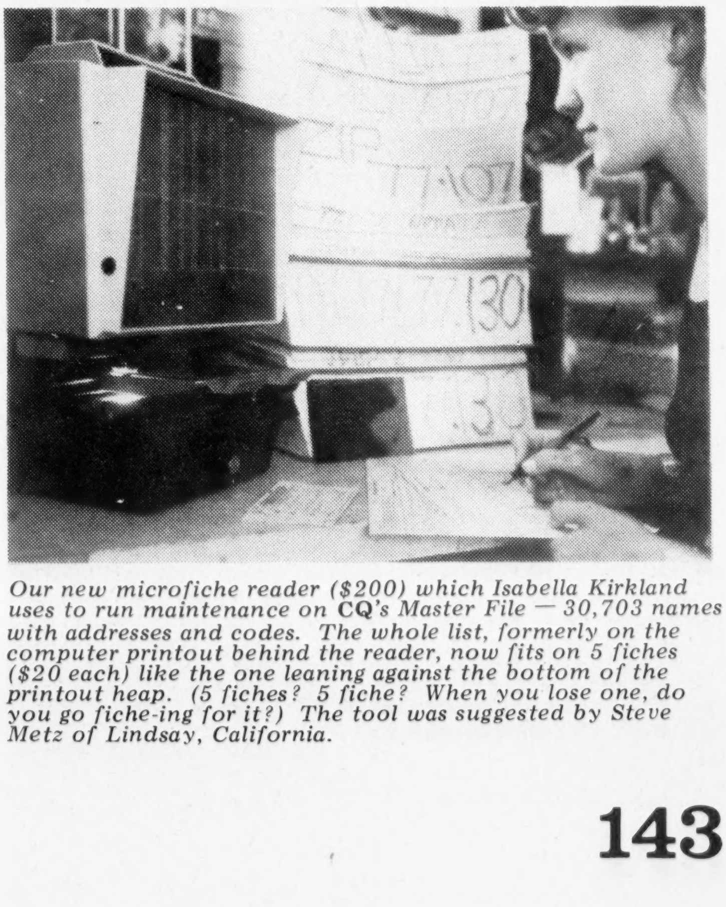
First CQ books

A special rate for CQ *subscribers may interest you in the first two "CoEvolution Books," available later this summer.* **SPACE COLONIES** *(144 pages) will include all the material in the out-of-print Fall '75 and Spring '76* CQ*'s plus new articles.* **SOFT TECH** *(144 pages) is co-edited by J. Baldwin, with a cover by S.N. Durkee that succeeds in its assignment of looking different than all the other alternative-technology publications. The two books are* CQ *format, book paper, indexed. Both cost $4 to the general public but* **$3** *to* CQ *subscribers. Orders welcome.*

—SB

People who write The CQ *often complain that there's a fetid incestuous odor about the magazine. For example, Julian Reid of Victoria, B.C., (the same who writes of tacit conspiracies on p. 35):*

> Writing to you I feel rather like an intruder stepping into an ongoing conversation — I've only been with you since Summer '76. There are a lot of things I want to say, but I feel a certain diffidence about saying them. This probably indicates more about my own hang-ups than CQ itself; nevertheless, I know at least one other



Our new microfiche reader ($200) which Isabella Kirkland uses to run maintenance on CQ*'s Master File — 30,703 names with addresses and codes. The whole list, formerly on the computer printout behind the reader, now fits on 5 fiches ($20 each) like the one leaning against the bottom of the printout heap. (5 fiches? 5 fiche? When you lose one, do you go fiche-ing for it?) The tool was suggested by Steve Metz of Lindsay, California.*

The CoEvolution Quarterly

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Chong Lee, San Francisco (photo prints)

(Gossip continued)

reader of yours who feels hesitant about writing for much the same reasons. Are you somehow projecting the impression of a closed shop? — a circumscribed inner circle of favored communicants? Probably not; but since you want reader-participation, it's worth thinking about.

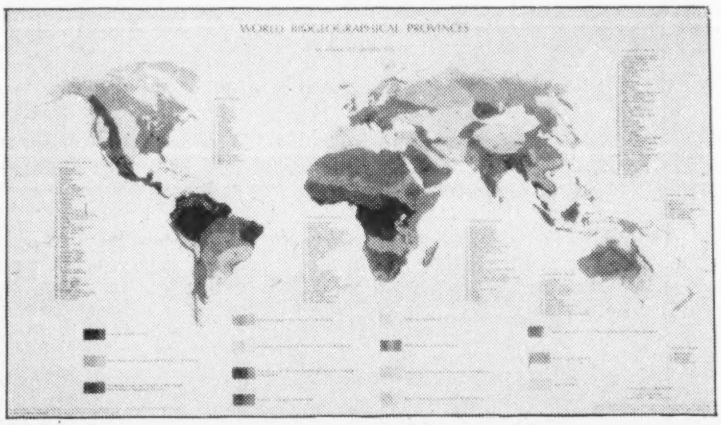
The only answer I can give, besides fret, is that we try to be transparent about how The CQ *goes together. That means we tell all about our financial situation from issue to issue. It also means we cop to the extended family of feeling that goes on around here, even though some of the figures are famous and some are smug. Every magazine with life to it has the same, but they hide it, presumably to avoid appearing clubby and exclusive.*

My guess is that this magazine is more open to newcomers than most. The editor reads every piece of mail that isn't purely business, though I can't personally reply to most of it. A lot of our best material comes from complete strangers (such as "Left Over in Your Heart" and "Turkey Drop" in this issue). Many of our regulars, such as illustrator Tom Parker and art editor Robert Horvitz, came to us through the post office, and we still haven't met them in person. Anne Herbert waltzed into the middle of this operation with nothing more than sparkling poetry and Ohio chutzpah.

What am I saying? That CQ *is a club meant to include, not exclude. We've always assumed that Julian Reid and the rest of you were inside with us, looking out, looking around, bitching at the slightest provocation, and spreading the word on anything good, useful, or interesting.*

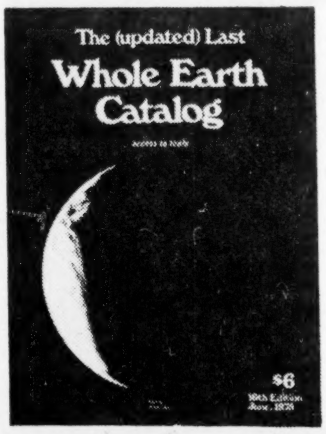
Most magazines, besides concealing their own behavior, endlessly snoop on their readers, prepare elaborate profiles, and give them only what it is imagined they will like. Most magazines write down to their readers. Since we don't carry advertising we haven't done any surveys on the CQ *readership. If you want* CoEvolution *to co-evolve with you, write. This is a small business — your opinions and dollars are its life blood. At the same time, with no contradiction, certain that it's fundamental to our service, we don't care at all what our readers think. Along with the real connectivity, coevolution requires the illusion of separateness. That's said affectionately and gratefully.*

—SB



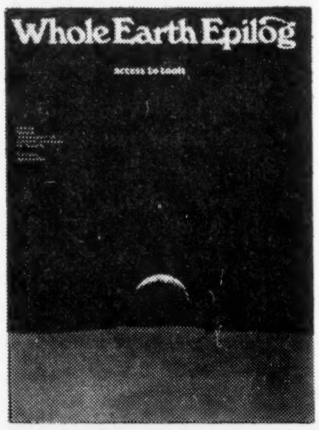
World Biogeographical Provinces Map, 22¾ x 39" – $3.00

A somewhat deeper politics is visible in the boundaries of biogeographical provinces, and human politics commonly errs by ignoring them. This map is a result of still on-going scientific research in plant and animal distribution.



Whole Earth Catalog – $6.00

Winner of the 1972 National Book Award, the **LWEC** functions as an evaluation and access device. It contains reviews of books and tools in the original Whole Earth categories: whole systems, community, shelter, craft, nomadics, communications, land use and learning.



Whole Earth Epilog – $4.00

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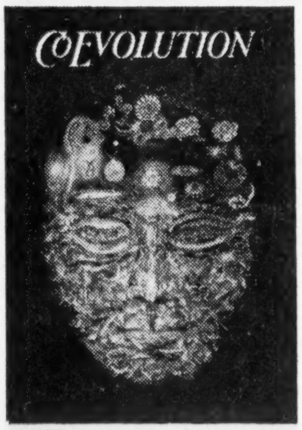

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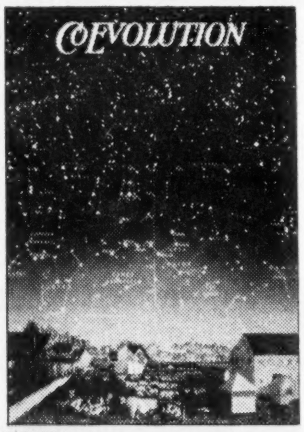

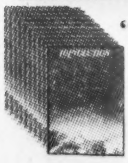

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Making and Playing the Shakuhachi *Monty H. Levenson*
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I would like to write a silence *Anne Herbert*
Odd Bodkins *Dan O'Neill*

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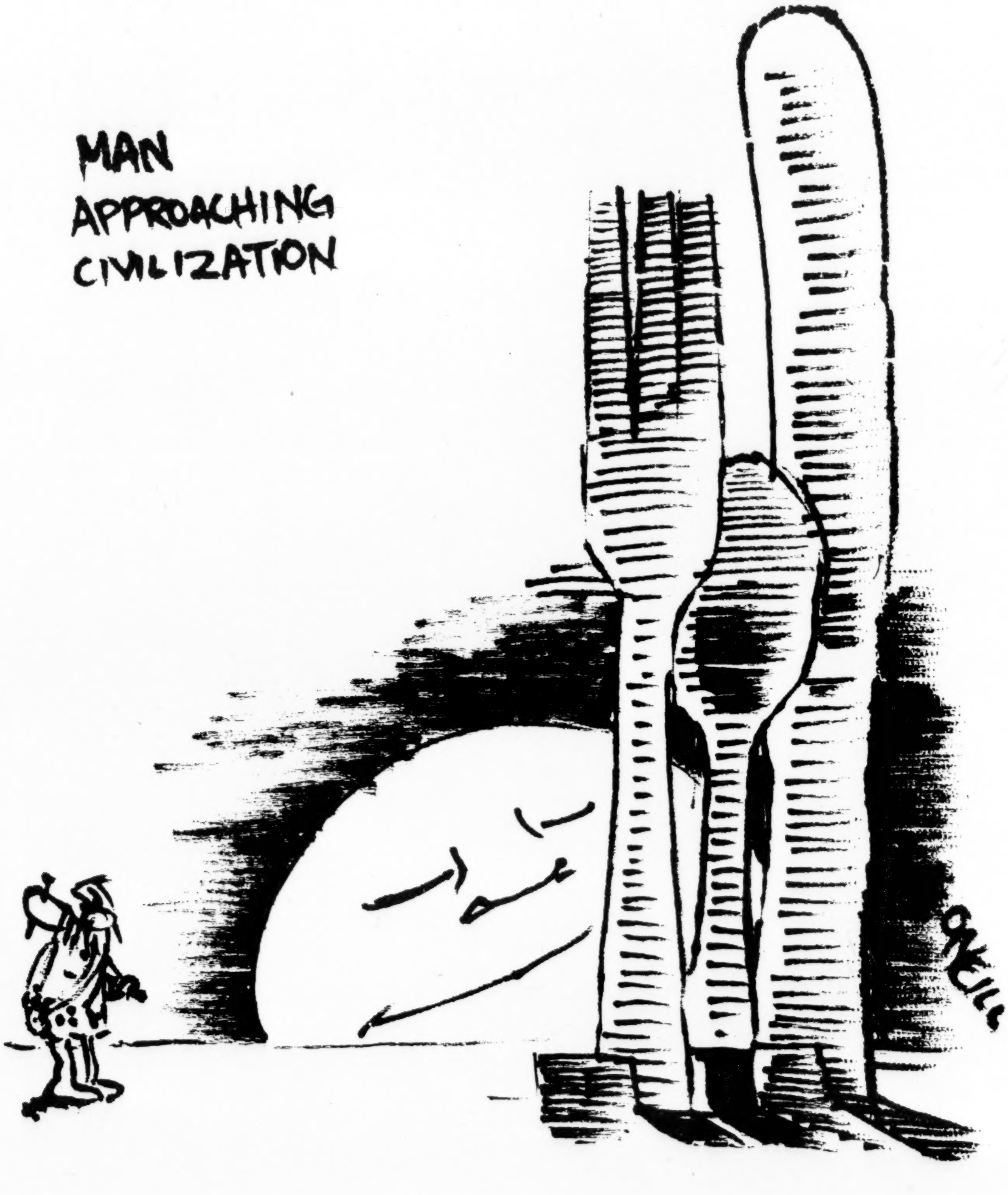

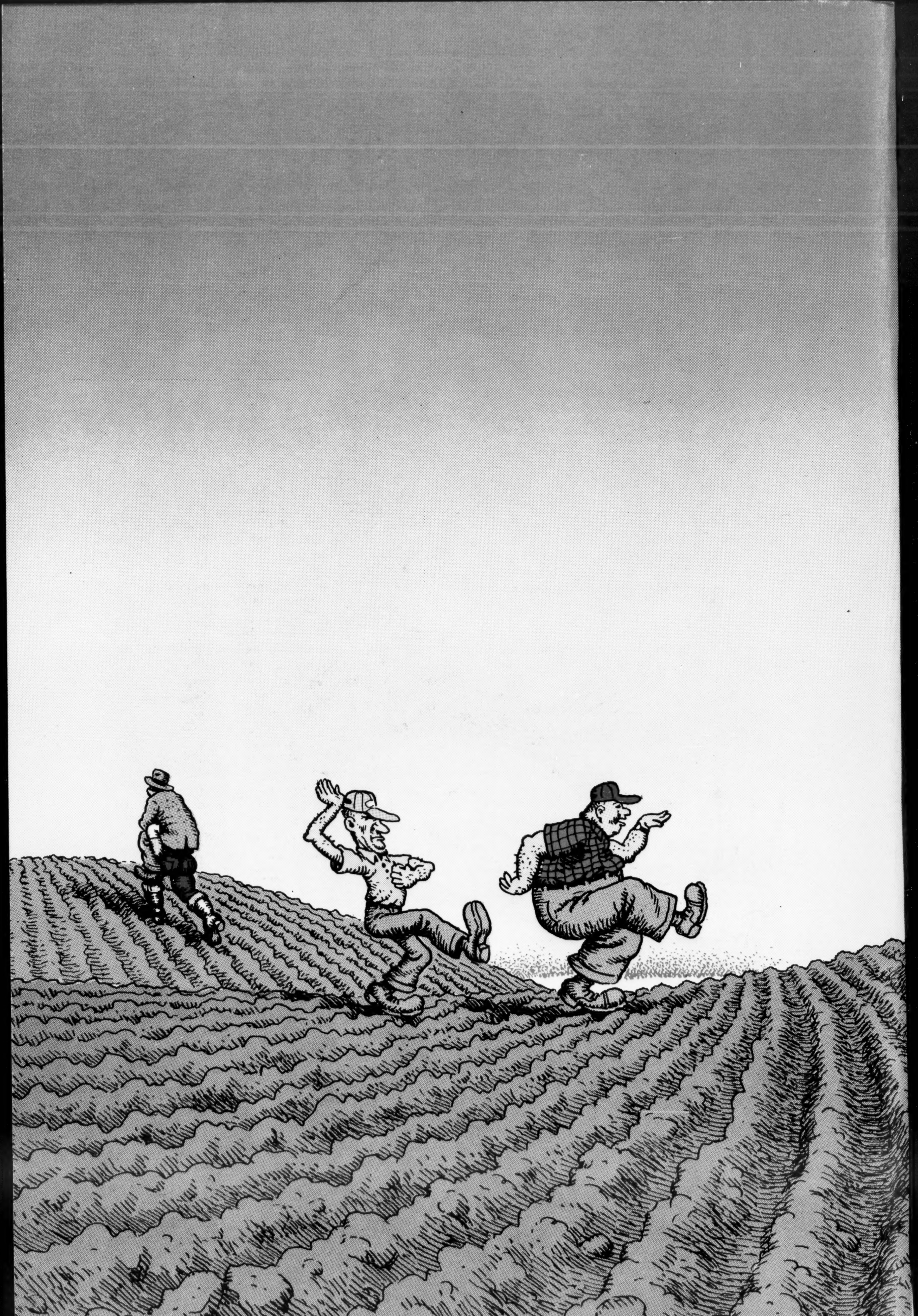
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